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 ********** STN Columbus **********
FILE 'HOME' ENTERED AT 12:17:54 ON 22 MAR 2002
=> file biosis,caba,caplus,embase,japio,lifesci,medline,scisearch,uspatfull
=> e dattwyler raymond/au
E1        1   DATTWYLER R I/AU
E2      343   DATTWYLER R J/AU
E3        3 --> DATTWYLER RAYMOND/AU
E4       31   DATTWYLER RAYMOND J/AU
E5        5   DATTWYLLER R J/AU
E6        1   DATTWYLLER RAYMOND J/AU
E7        1   DATU A P/AU
E8       33   DATU A R/AU
E9        3   DATU ABDUL RAZAK/AU
E10       1   DATU G B/AU
E11       3   DATU J/AU
E12      12   DATU J A/AU

=> s e2-e6 and borreli?
L1      291 ("DATTWYLER R J"/AU OR "DATTWYLER RAYMOND"/AU OR "DATTWYLER
          RAYMOND J"/AU OR "DATTWYLLER R J"/AU OR "DATTWYLLER RAYMOND
          J"/AU) AND BORRELI?

=> dup rem l1
PROCESSING COMPLETED FOR L1
L2      102 DUP REM L1 (189 DUPLICATES REMOVED)

=> d bib ab 1-
YOU HAVE REQUESTED DATA FROM 102 ANSWERS - CONTINUE? Y/(N):y


L2  ANSWER 1 OF 102  CABA COPYRIGHT 2002 CABI        DUPLICATE 1
AN  2002:54808  CABA
DN  20023017950
TI  Recombinant assay for serodiagnosis of Lyme disease regardless of OspA
    vaccination status
AU  Gomes-Solecki, M. J. C.; Wormser, G. P.; Schriefer, M.; Neuman, G.;
    Hannafey, L.; Glass, J. D.;  ***Dattwyler, R. J.***
CS  Brook Biotechnologies, Inc., Stony Brook, NY 11790-3350, USA.
SO  Journal of Clinical Microbiology, (2002) Vol. 40, No. 1, pp. 193-197. 25
    ref.
    ISSN: 0095-1137
DT  Journal
LA  English
AB  All current seroassays using cultured  ***Borrelia***  burgdorferi as
    their antigen source have been rendered obsolete by the recombinant OspA
    Lyme disease vaccine. OspA is the major outer surface protein expressed in
    cultured B. burgdorferi, and any seroassay that uses whole organisms as
    its antigen source cannot differentiate between subjects who received the
    vaccine and those who were naturally infected. We developed a new
    sensitive and specific ELISA utilizing recombinant chimaeric
     ***borrelia***  proteins devoid of OspA (rNon-OspA) that can be used to
    detect antibodies to diagnostically important B. burgdorferi antigens in
    both OspA-vaccinated and nonvaccinated individuals. We tested sera from
    patients with Lyme disease and with conditions associated with
    false-positive serologies, OspA-vaccinated individuals, and healthy
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high-risk workers from an area of endemicity and normal sera from individuals from areas of nonendemicity. The rNon-OspA test was compared with two commercially available whole-cell immunoassays [USA; date not given]. The rNon-OspA assay is as sensitive and specific as the whole-cell assay (P>0.05) for detection of anti-B. burgdorferi antibodies. However, the rNon-OspA assay can differentiate between populations comprised of naturally infected and OspA-vaccinated individuals (P<0.05). Our data demonstrate that this new sensitive rNon-OspA ELISA can be used for the laboratory detection of B. burgdorferi antibodies regardless of vaccination status and could replace existing serological assays for Lyme disease.

L2 ANSWER 2 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 2
AN 2001:467352 BIOSIS
DN PREV200100467352
TI A first-tier rapid assay for the serodiagnosis of ***Borrelia*** burgdorferi infection.
AU Gomes-Solecki, Maria J. C.; Wormser, Gary P.; Persing, David H.; Berger, Bernard W.; Glass, John D.; Yang, Xiaohua; ***Dattwyler, Raymond J.*** *** (1)***
CS (1) Department of Medicine, State University of New York at Stony Brook, Stony Brook, NY, 11794-8161: RAYD@epo.som.sunnysb.edu USA
SO Archives of Internal Medicine, (September 10, 2001) Vol. 161, No. 16, pp. 2015-2020. print.
ISSN: 0003-9926.
DT Article
LA English
SL English
AB Background: The present recommendation for the serologic diagnosis of Lyme disease is a 2-tier process in which a serum sample with a positive or equivocal result by an enzyme-linked immunosorbent assay (ELISA) or immunofluorescent assay is then followed by supplemental testing by Western blot. Our laboratory has developed recombinant chimeric proteins composed of key ***Borrelia*** epitopes. These novel antigens are consistent and are easily standardized. Methods: We adapted these recombinant proteins into a new immunochromatographic format that can be used as a highly sensitive and specific first-tier assay that can be used to replace the ELISA or immunofluorescent assay. Results: This rapid test was equally sensitive (P>.05) and more specific (P<.05) than a frequently used commercial whole cell ELISA. The overall clinical accuracy achieved on agreement studies among 3 Lyme research laboratories on clinically defined serum panels was shown to be statistically equivalent to the commercial ELISA. The assay can detect anti- ***Borrelia*** burgdorferi antibodies in either serum or whole blood. Conclusion: This sensitive and specific rapid assay, which is suited for the physician's office, streamlines the 2-tier system by allowing the physician to determine if a Western blot is necessary at the time of the initial office visit.

L2 ANSWER 3 OF 102 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
AN 2001406737 EMBASE
TI A first-tier rapid assay for the serodiagnosis of ***borrelia*** burgdorferi infection.
AU Gomes-Solecki M.J.C.; Wormser G.P.; Persing D.H.; Berger B.W.; Glass J.D.; Yang X.; ***Dattwyler R.J.***

CS Dr. R.J. Dattwyler, Department of Medicine, State University of New York, Stony Brook, NY 11794-8161, United States. RAYD@epo.som.sunnysb.edu
SO Archives of Internal Medicine, (26 Nov 2001) 161/21 (2015-2020).
Refs: 23
ISSN: 0003-9926 CODEN: AIMDAP
CY United States
DT Journal; Article
FS 004 Microbiology
006 Internal Medicine
LA English
SL English
AB Background: The present recommendation for the serologic diagnosis of Lyme disease is a 2-tier process in which a serum sample with a positive or equivocal result by an enzyme-linked immunosorbent assay (ELISA) or immunofluorescent assay is then followed by supplemental testing by Western blot. Our laboratory has developed recombinant chimeric proteins composed of key ***Borrelia*** epitopes. These novel antigens are consistent and are easily standardized. Methods: We adapted these recombinant proteins into a new immunochromatographic format that can be used as a highly sensitive and specific first-tier assay that can be used to replace the ELISA or immunofluorescent assay. Results: This rapid test was equally sensitive (P>.05) and more specific (P<.05) than a frequently used commercial whole cell ELISA. The overall clinical accuracy achieved on agreement studies among 3 Lyme research laboratories on clinically defined serum panels was shown to be statistically equivalent to the commercial ELISA. The assay can detect anti- ***Borrelia*** burgdorferi antibodies in either serum or whole blood. Conclusion: This sensitive and specific rapid assay, which is suited for the physician's office, streamlines the 2-tier system by allowing the physician to determine if a Western blot is necessary at the time of the initial office visit.

L2 ANSWER 4 OF 102 CAPLUS COPYRIGHT 2002 ACS
AN 2000:911434 CAPLUS
DN 134:67201
TI ***Borrelia*** burgdorferi and B. afzelii gene ospC fusion proteins, their sequences, and use as immunogenic compositions for immunizing animals against Lyme disease
IN ***Dattwyler, Raymond J.*** ; Seinost, Gerald; Dykhuizen, Daniel; Luft, Benjamin J.; Gomes-solecki, Maria
PA Research Foundation of State University of New York, USA; Brook Biotechnologies, Inc.
SO PCT Int. Appl., 160 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000078966	A1	20001228	WO 2000-US16915	20000619

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
PRAI US 1999-140042P P 19990618
AB The invention provides numerous gene ospC proteins, or immunogenic fragment thereof, from Lyme disease causing ***Borrelia*** , such as B. burgdorferi (families A, B, I and K) or B. afzelii (families A and B). The invention also provides numerous chimeric proteins contg. at least two of the said OspC proteins from B. burgdorferi (families A, B, I and K) or B. afzelii (families A and B). The invention further provides nucleic acid mols. encoding said chimeric OspC proteins. Still further, the invention provides the for the use of said OspC fusion proteins as immunogenic compns., which can act as vaccines to immunize animals against Lyme disease. Finally, the invention provides: (1) a method for detecting an immune response to Lyme disease which utilizes the chimeric OspC proteins and (2) the nucleic acid sequences, as well as the amino acid sequences, of the ***Borrelia*** chimeric OspC proteins. The invention relates that: (1) B. burgdorferi family A strains contain gene ospC allele OC1; (2) B. burgdorferi family B strains contain gene ospC alleles OC2 and OC3; (3) B. burgdorferi family I strains contain gene ospC allele OC10 and (4) B. burgdorferi family K strains contain gene ospC alleles OC12 and OC13. In the example section, the invention showed the results of immunizing mice with the various OspC chimeric proteins.
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 5 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 3
AN 2000:359172 BIOSIS
DN PREV200000359172
TI Recombinant chimeric ***borrelia*** proteins for diagnosis of Lyme disease.
AU Gomes-Solecki, Maria J. C.; Dunn, John J.; Luft, Benjamin J.; Castillo, Jonathan; Dykhuizen, Daniel E.; Yang, Xiaohua; Glass, John D.; ***Dattwyler, Raymond J. (1)***
CS (1) Department of Medicine, State University of New York at Stony Brook, Stony Brook, NY, 11794-8161 USA
SO Journal of Clinical Microbiology, (July, 2000) Vol. 38, No. 7, pp. 2530-2535. print.
ISSN: 0095-1137.
DT Article
LA English
SL English
AB Current serologic Lyme disease tests use whole ***borrelia*** cells as the source of antigen. These assays are difficult to standardize and to optimize for sensitivity and specificity. To help solve these problems, we constructed a library of recombinant chimeric proteins composed of portions of key antigens of ***Borrelia*** burgdorferi. These proteins were then used to develop an enzyme-linked immunosorbent assay. We compared our assay with the most sensitive of three whole-cell ***borrelia*** assays. We found that the recombinant assay could detect antibodies significantly better from early Lyme disease sera ($P < 0.05$), and had the same sensitivity for late Lyme disease sera, as the most sensitive whole-cell ***borrelia*** assay. On potentially cross-reactive sera, the recombinant assay was more specific, but not

significantly so, than the best whole-cell ***borrelia*** assay. Optimization of the recombinant assay offers the potential for a significant improvement in both sensitivity and specificity.

L2 ANSWER 6 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 2001:42016 BIOSIS
DN PREV200100042016
TI T cell antigen reactivity to recombinant OspA and the homologous self peptide of LFA-1 in patients with Lyme disease.
AU Golde, W. T. (1); Wood, J.; Dunn, J. J.; ***Dattwyler, R. J.*** ; Luft, B. J.; Coyle, P.; Kalish, R.
CS (1) Plum Island Animal Diseases Center, Greenport, NY USA
SO FASEB Journal, (April 20, 2000) Vol. 14, No. 6, pp. A950. print.
Meeting Info.: Joint Annual Meeting of the American Association of Immunologists and the Clinical Immunology Society Seattle, Washington, USA May 12-16, 2000
ISSN: 0892-6638.
DT Conference
LA English
SL English

L2 ANSWER 7 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 2000:390707 BIOSIS
DN PREV200000390707
TI A rapid 1st tier recombinant assay for the serodiagnosis of Lyme disease.
AU Neuman, R. G. (1); Gomes-Solecki, M. J. C.; Glass, J. D.; Berger, B. W.; ***Dattwyler, R. J.***
CS (1) Wampole Laboratories, Cranbury, NJ USA
SO Abstracts of the General Meeting of the American Society for Microbiology, (2000) Vol. 100, pp. 273. print.
Meeting Info.: 100th General Meeting of the American Society for Microbiology Los Angeles, California, USA May 21-25, 2000 American Society for Microbiology
. ISSN: 1060-2011.
DT Conference
LA English
SL English

L2 ANSWER 8 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 4
AN 2000:431789 BIOSIS
DN PREV200000431789
TI Practice guidelines for the treatment of lyme disease.
AU Wormser, Gary P. (1); Nadelman, Robert B.; ***Dattwyler, Raymond J.*** ; Dennis, David T.; Shapiro, Eugene D.; Steere, Allen C.; Rush, Thomas J.; Rahn, Daniel W.; Coyle, Patricia K.; Persing, David H.; Fish, Durland; Luft, Benjamin J.
CS (1) Westchester Medical Center, Room 209 SE, Macy Pavilion, Valhalla, NY, 10595 USA
SO Clinical Infectious Diseases, (July, 2000) Vol. 31, No. Supplement 1, pp. S1-S14. print.
ISSN: 1058-4838.
DT Article
LA English
SL English

L2 ANSWER 9 OF 102 CABA COPYRIGHT 2002 CABI
AN 2001:18314 CABA
DN 20003005074
TI Practice Guidelines for the Treatment of Lyme Disease
AU Wormser, G. P.; Nadelman, R. B.; ***Dattwyler, R. J.*** ; Dennis, D. T.; Shapiro, E. D.; Steere, A. C.; Rush, T. J.; Rahn, D. W.; Coyle, P. K.; Persing, D. H.; Fish, D.; Luft, B. J.
CS Division of Infectious Diseases, Department of Medicine, New York Medical College, Valhalla, USA.
SO Clinical Infectious Diseases, (2000) Vol. 31, No. Suppl. 1, pp. 0-S14. 99 ref.
Price: Journal issue .
ISSN: 1058-4838
DT Journal
LA English
AB Recommendations made by the Infectious Diseases Society of America (USA) aimed at providing clinicians and other health care practitioners guidelines in managing patients with Lyme disease or cases bitten by an Ixodes tick in North America are presented. Discussed are the prevention of tick bites, chemoprophylaxis for patients with a tick bite, and therapy of early, late and chronic Lyme disease.

L2 ANSWER 10 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC. DUPLICATE 5
AN 1999:359404 BIOSIS
DN PREV199900359404
TI Four clones of ***Borrelia*** burgdorferi sensu stricto cause invasive infection in humans.
AU Seinost, Gerald; Dykhuizen, Daniel E.; ***Dattwyler, Raymond J. (1)*** ; Golde, William T.; Dunn, John J.; Wang, Ing-Nang; Wormser, Gary P.; Schriefer, Martin E.; Luft, Benjamin J.
CS (1) Division of Clinical Immunology/Allergy, Department of Medicine, Health Sciences Center, State University of New York at Stony Brook, Stony Brook, NY, 11794-8161 USA
SO Infection and Immunity, (July, 1999) Vol. 67, No. 7, pp. 3518-3524. ISSN: 0019-9567.
DT Article
LA English
SL English
AB Lyme disease begins at the site of a tick bite, producing a primary infection with spread of the organism to secondary sites occurring early in the course of infection. A major outer surface protein expressed by the spirochete early in infection is outer surface protein C (OspC). In ***Borrelia*** burgdorferi sensu stricto, OspC is highly variable. Based on sequence divergence, alleles of ospC can be divided into 21 major groups. To assess whether strain differences defined by ospC group are linked to invasiveness and pathogenicity, we compared the frequency distributions of major ospC groups from ticks, from the primary erythema migrans skin lesion, and from secondary sites, principally from blood and spinal fluid. The frequency distribution of ospC groups from ticks is significantly different from that from primary sites, which in turn is significantly different from that from secondary sites. The major groups A, B, I, and K had higher frequencies in the primary sites than in ticks and were the only groups found in secondary sites. We define three

categories of major ospC groups: one that is common in ticks but very rarely if ever causes human disease, a second that causes only local infection at the tick bite site, and a third that causes systemic disease. The finding that all systemic B. burgdorferi sensu stricto infections are associated with four ospC groups has importance in the diagnosis, treatment, and prevention of Lyme disease.

L2 ANSWER 11 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 6
AN 2000:16811 BIOSIS
DN PREV200000016811
TI Infection with multiple strains of ***Borrelia*** burgdorferi sensu stricto in patients with Lyme disease.
AU Seinost, Gerald; Golde, William T.; Berger, Bernard W.; Dunn, John J.; Qiu, Dan; Dunkin, David S.; Dykhuizen, Daniel E.; Luft, Benjamin J.; ***Dattwyler, Raymond J. (1)***
CS (1) Division of Allergy/Clinical Immunology, HSC 16T-040, Department of Medicine, State University of New York at Stony Brook, Stony Brook, NY, 11794-8161 USA
SO Archives of Dermatology, (Nov., 1999) Vol. 135, No. 11, pp. 1329-1333. ISSN: 0003-987X.
DT Article
LA English
SL English
AB Objective: To assess human skin biopsy specimens from erythema migrans lesions for the presence of infection with multiple strains of the Lyme disease spirochete, ***Borrelia*** burgdorferi. Design: Skin biopsy specimens were obtained prospectively from patients with erythema migrans. To determine allelic differences and strain identification of B burgdorferi, the biopsy specimens were analyzed by cold single-strand conformation polymorphism of an amplified fragment of the outer surface protein C (ospC) gene. Further single-strand conformation polymorphism patterns of amplified ospC genes from culture isolates were compared with polymerase chain reaction products obtained directly from erythema migrans biopsy specimens. Setting: A private dermatology office and a university medical center outpatient department. Patients: Sixteen patients presenting with erythema migrans. Results: Two of the 16 patients in this cohort were infected with 2 B burgdorferi sensu stricto strains, as evidence d by 2 ospC alleles in their skin biopsy results. Conclusion: This is the first documented description of the existence of more than a single strain of B burgdorferi sensu stricto in a human specimen.

L2 ANSWER 12 OF 102 MEDLINE
AN 1999378548 MEDLINE
DN 99378548 PubMed ID: 10557850
TI A rapid test for detection of Lyme disease antibodies.
AU ***Dattwyler R J*** ; Gomes-Solecki M
CS SUNY at Stony Brook, Department of Medicine 11794, USA..
RAYD@epo.som.sunysb.edu
SO AMERICAN CLINICAL LABORATORY, (1999 Jul) 18 (6) 6.
Journal code: BCC; 8903666. ISSN: 8750-9490.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS T

EM 199910
ED Entered STN: 20010223
Last Updated on STN: 20010223
Entered Medline: 19991004

L2 ANSWER 13 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 7
AN 1998:393305 BIOSIS
DN PREV199800393305
TI Cardiovascular manifestations of Lyme disease and effects upon left ventricular dysfunction.
AU Seinost, G. (1); Gasser, R.; Reisinger, E.; Rigler, M. Y.; Fischer, L.; Keplinger, A.; ***Dattwyler, R. J.*** ; Dunn, J. J.; Klein, W.
CS (1) State Univ. N.Y. Stony Brok, Dep. Med., Div. Clin. Immunol./Allergy, Stony Brook, NY 11794-8161 USA
SO Acta Medica Austriaca, (1998) Vol. 25, No. 2, pp. 44-50.
ISSN: 0303-8173.
DT Article
LA German
SL German; English
AB ***Borrelia*** burgdorferi infection (BBI) is suggested to be associated with dilated cardiomyopathy (IDC). Stanek et al. were able to cultivate ***Borrelia*** burgdorferi (BB) from myocardial biopsy tissue of a patient with longstanding dilated cardiomyopathy. Here we present a study in which we examined the effect of standard antibiotic treatment on the left ventricular ejection fraction (LV-EF) in patients with dilated cardiomyopathy associated with BBI. In this study we assessed the serum (IgG, IgM ELISA; Western Blot) and the history of 46 IDC-patients with specific respect to BBI (mean LV-EF: 30.4 +- 1.3%; measured by cardiac catheterization and echocardiography - length-area-volume method). All 46 patients received standard treatment for dilated cardiomyopathy: ACE-inhibitors, digitalis and diuretics. 11 (24%) patients showed positive serology and a history of BBI; 9 of these also had a typical history of tick bite and erythema chronicum migrans (ECM) and/or other organ involvement, 2 had no recollection of tick bite or ECM, but showed other BB-associated disorders (neuropathy, oligoarthritis). These 11 patients with BBI received standard antibiotic treatment with intravenous ceftriaxone 2 g bid for 14 days. 6 (55%) recovered completely and showed a normal LV-EF after 6 months, 3 (27%) improved their LV-EF and 2 (18%) did not improve at all. This amounts to 9 (82%) recovery/improvement in the BB-group. The 35 patients who did not show positive serology or a history of BBI did not receive antibiotic treatment, In this group without BBI 12 (26%) showed recovery/improvement following the standard treatment of dilated cardiomyopathy (see above). Our results indicate that BBI could play a decisive role in the development of dilated cardiomyopathy, especially in a geographical region as Graz, where BB is endemic. While aware of the small number of BB-patients in this study, we nevertheless conclude that, in a remarkable number of patients with signs of BBI, dilated cardiomyopathy could be reversed and LV-EF improved upon standard antibiotic treatment.

L2 ANSWER 14 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 8
AN 1997:440311 BIOSIS
DN PREV199799739514

TI Simultaneous expression of ***Borrelia*** OspA and OspC and IgM response in cerebrospinal fluid in early neurologic lyme disease.
AU Schutzer, Steven E. (1); Coyle, P. K.; Krupp, Lauren B.; Deng, Zhidian; Belman, Anita L.; ***Dattwyler, Raymond*** ; Luft, Benjamin J.
CS (1) Dep. Med., Univ. Med. Dent. N.J., MSB E573, 185 S. Orange Ave., Newark, NJ 07103 USA
SO Journal of Clinical Investigation, (1997) Vol. 100, No. 4, pp. 763-767. ISSN: 0021-9738.
DT Article
LA English
AB Lyme disease is the major tick-borne disease, caused by ***Borrelia*** burgdorferi (Bb). Neurological involvement is common in all stages. In vivo expression of Bb antigens (Ags) and the immune response to them has not been well investigated in the cerebrospinal fluid (CSF). Upregulation of outer surface protein (Osp) C and concomitant downregulation of OspA before tick inoculation of the spirochete has been reported in skin and blood in animals. CSF OspA Ag in early disease suggests otherwise in CSF. Early Ag expression and IgM response in human CSF was investigated here. Paired CSF and serum was collected from 16 early, predominantly erythema migrans Lyme disease patients with neurologic problems, 13 late Lyme disease patients, and 19 other neurologic disease (OND) controls. Samples were examined for IgM reactivity to recombinant Bb-specific Osps using ELISA and immunoblot. Of 12 early Lyme disease patients with neurologic involvement with both CSF and serum IgM against OspC, 7 (58%) had IgM to OspA (n = 5) or OspB (n = 2) that was restricted to the CSF, not serum. Overall, 12 of 16 (75%) of these early Lyme disease patients with neurologic involvement had CSF and serum IgM against OspC. Only 3 of 13 (23%) late Lyme disease patients and none of 19 OND controls had CSF IgM directed against OspC. In conclusion, in CSF, OspC and OspA can be coexpressed, and IgM response to them occurs in early Lyme disease patients with neurologic involvement. This biologic finding may also provide a discriminating marker for CNS infection in Lyme disease.

L2 ANSWER 15 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC. DUPLICATE 9
AN 1997:387940 BIOSIS
DN PREV199799687143
TI Ceftriaxone compared with doxycycline for the treatment of acute disseminated Lyme disease.
AU ***Dattwyler, Raymond J. (1)*** ; Luft, Benjamin J.; Kunkel, Mark J.; Finkel, Michael F.; Wormser, Gary P.; Rush, Thomas J.; Grunwaldt, Edgar; Agger, William A.; Franklin, Michael; Oswald, Donald; Cockey, Louise; Maladorno, Dionigi
CS (1) Dep. Med., State Univ. N.Y. at Stony Brook, Stony Brook, NY 11794-8161 USA
SO New England Journal of Medicine, (1997) Vol. 337, No. 5, pp. 289-294. ISSN: 0028-4793.
DT Article
LA English
AB Background. Localized Lyme disease, manifested by erythema migrans, is usually treated with oral doxycycline or amoxicillin. Whether acute disseminated ***Borrelia*** burgdorferi infection should be treated differently from localized infection is unknown. Methods. We conducted a prospective, open-label, randomized, multicenter study comparing parenteral ceftriaxone (2 g once daily for 14 days) with oral doxycycline

(100 mg twice daily for 21 days) in patients with acute disseminated B. burgdorferi infection but without meningitis. The erythema migrans skin lesion was required for study entry, and disseminated disease had to be indicated by either multiple erytheme migrans lesions or objective evidence of organ involvement. Results. Of 140 patients enrolled, 133 had multiple erythema migrans lesions. Both treatments were highly effective. Rates of clinical cure at the last evaluation were similar among the patients treated with ceftriaxone (85 percent) and those treated with doxycycline (88 percent); treatment was considered to have failed in only one patient in each group. Among patients whose infections were cured, 18 of 67 patients in the ceftriaxone group (27 percent) reported one or more residual symptoms at the last follow-up visit, as did 10 of 71 patients in the doxycycline group (14 percent, P gtoreq 0.05). Mild arthralgia was the most common persistent symptom. Both regimens were well tolerated; only four patients (6 percent) in each group withdrew because of adverse events. Conclusions. In patients with acute disseminated Lyme disease but without meningitis, oral doxycycline and parenterally administered ceftriaxone were equally effective in preventing the late manifestations of disease.

L2 ANSWER 16 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 10
AN 1996:239616 BIOSIS
DN PREV199698787745
TI Azithromycin compared with amoxicillin in the treatment of erythema migrans: A double-blind, randomized, controlled trial.
AU Luft, Benjamin J. (1); ***Dattwyler, Raymond J.*** ; Johnson, Russell C.; Luger, Steven W.; Bosler, Elizabeth M.; Rahn, Daniel W.; Masters, Edwin J.; Grunwaldt, Edgar; Gadgil, Shrikant D.
CS (1) Dep. Medicine, HSC T-16, State University New York Stony Brook, Stony Brook, NY 11794-8160 USA
SO Annals of Internal Medicine, (1996) Vol. 124, No. 9, pp. 785-791. ISSN: 0003-4819.
DT Article
LA English
AB Objective: To determine whether azithromycin or amoxicillin is more efficacious for the treatment of erythema migrans skin lesions, which are characteristic of Lyme disease. Design: Randomized, double-blind, double-dummy, multicenter study. Acute manifestations and sequelae were assessed using a standardized format. Baseline clinical characteristics and response were correlated with serologic results. Patients were followed for 180 days. Setting: 12 outpatient centers in eight states. Patients: 246 adult patients with erythema migrans lesions at least 5 cm in diameter were enrolled and were stratified by the presence of flu-like symptoms (such as fever, chills, headache, malaise, fatigue, arthralgias, and myalgias) before randomization. Intervention: Oral treatment with either amoxicillin, 500 mg three times daily for 20 days, or azithromycin, 500 mg once daily for 7 days. Patients who received azithromycin also received a dummy placebo so that the dosing schedules were identical. Results: Of 217 evaluable patients, those treated with amoxicillin were significantly more likely than those treated with azithromycin to achieve complete resolution of disease at day 20, the end of therapy (88% compared with 76%; P = 0.024). More azithromycin recipients (16%) than amoxicillin recipients (4%) had relapse (P = 0.005). A partial response at day 20 was highly predictive of relapse (27% of partial responders had relapse

compared with 6% of complete responders; P lt 0.001). For patients treated with azithromycin, development of an antibody response increased the possibility of achieving a complete response (81% of seropositive patients achieved a complete response compared with 60% of seronegative patients; P = 0.043). Patients with multiple erythema migrans lesions were more likely than patients with single erythema migrans lesions (P lt 0.001) to have a positive antibody titer at baseline (63% compared with 17% for IgM; 39% compared with 16% for IgG). Fifty-seven percent of patients who had relapse were seronegative at the time of relapse. Conclusions: A 20-day course of amoxicillin was found to be an effective therapeutic regimen for erythema migrans, Most patients were seronegative for ***Borrelia*** burgdorferi at the time of presentation with erythema migrans (65%) and at the time of relapse (57%).

L2 ANSWER 17 OF 102 SCISEARCH COPYRIGHT 2002 ISI (R)
AN 96:317321 SCISEARCH
GA The Genuine Article (R) Number: UG254
TI AZITHROMYCIN COMPARED WITH AMOXICILLIN IN THE TREATMENT OF ERYTHEMA MIGRANS - A DOUBLE-BLIND, RANDOMIZED, CONTROLLED TRIAL
AU LUFT B J (Reprint); ***DATTWYLER R J*** ; JOHNSON R C; LUGER S W; BOSLER E M; RAHN D W; MASTERS E J; GRUNWALDT E; GADGIL S D
CS SUNY STONY BROOK, DEPT MED, HSC T-16, ROOM 020, STONY BROOK, NY, 11794 (Reprint); UNIV MINNESOTA, DEPT MICROBIOL, MINNEAPOLIS, MN, 55455; KAISER PERMANENTE, ROCKY HILL, CT, 06067; FAMILY PHYSICIANS GRP, CAPE GIRARDEAU, MO, 63703; YALE UNIV, NEW HAVEN, CT, 00000; PFIZER INC, GROTON, CT, 00000
CYA USA
SO ANNALS OF INTERNAL MEDICINE, (01 MAY 1996) Vol. 124, No. 9, pp. 785. ISSN: 0003-4819.
DT Article; Journal
FS LIFE; CLIN
LA ENGLISH
REC Reference Count: 20
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB Objective: To determine whether azithromycin or amoxicillin is more efficacious for the treatment of erythema migrans skin lesions, which are characteristic of Lyme disease.

Design: Randomized, double-blind, double-dummy, multicenter study. Acute manifestations and sequelae were assessed using a standardized format. Baseline clinical characteristics and response were correlated with serologic results. Patients were followed for 180 days.

Setting: 12 outpatient centers in eight states.

Patients: 246 adult patients with erythema migrans lesions at least 5 cm in diameter were enrolled and were stratified by the presence of flu-like symptoms (such as fever, chills, headache, malaise, fatigue, arthralgias, and myalgias) before randomization.

Intervention: Oral treatment with either amoxicillin, 500 mg three times daily for 20 days, or azithromycin, 500 mg once daily for 7 days. Patients who received azithromycin also received a dummy placebo so that the dosing schedules were identical.

Results: Of 217 evaluable patients, those treated with amoxicillin were significantly more likely than those treated with azithromycin to achieve complete resolution of disease at day 20, the end of therapy (88% compared with 76%; P = 0.024). More azithromycin recipients (16%) I than amoxicillin recipients (4%) had relapse (P = 0.005). A partial response at day 20 was highly predictive of relapse (27% of partial responders had

relapse compared with 6% of complete responders; P < 0.001). For patients treated with azithromycin, development of an antibody response increased the possibility of achieving a complete response (81% of seropositive patients achieved a complete response compared with 60% of seronegative patients; P = 0.043). Patients with multiple erythema migrans lesions were more likely than patients with single erythema migrans lesions (P < 0.001) to have a positive antibody titer at baseline (63% compared with 17% for IgM; 39% compared with 16% for IgG). Fifty-seven percent of patients who had relapse were seronegative at the time of relapse.

Conclusions: A 20-day course of amoxicillin was found to be an effective therapeutic regimen for erythema migrans. Most patients were seronegative for ***Borrelia*** burgdorferi at the time of presentation with erythema migrans (65%) and at the time of relapse (57%).

L2 ANSWER 18 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 11
AN 1996:151522 BIOSIS
DN PREV199698723657
TI Clarithromycin in treatment of early Lyme disease: A pilot study.
AU ***Dattwyler, Raymond J. (1)*** ; Grunwaldt, Edgar; Luft, Benjamin J.
CS (1) Lyme Disease Cent., HSC T-16, Room 040, State Univ. New York Stony Brook, Stony Brook, NY 11794-8161 USA
SO Antimicrobial Agents and Chemotherapy, (1996) Vol. 40, No. 2, pp. 468-469. ISSN: 0066-4804.
DT Article
LA English
AB Forty-one patients with erythema migrans were enrolled in an open-labelled pilot study of oral clarithromycin, 500 mg twice daily for 21 days, for the treatment of early Lyme disease. Immediately posttherapy, pretreatment signs and symptoms resolved among 91% of the 33 evaluable patients. At 6 months, all 28 of the evaluable patients were well. Clarithromycin shows promise as an effective agent for the treatment of early Lyme disease and warrants further study.

L2 ANSWER 19 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1996:342100 BIOSIS
DN PREV199699064456
TI Improved serodiagnostic testing for Lyme disease: Results of a multicenter serologic evaluation.
AU Craven, Robert B. (1); Quan, Thomas J. (1); Bailey, Raymond E. (1); ***Dattwyler, Raymond*** ; Ryan, Raymond W.; Sigal, Leonard H.; Steere, Allen C.; Sullivan, Bradley; Johnson, Barbara J. B. (1); Dennis, David T. (1); Gubler, Duane J. (1)
CS (1) Cent. Dis. Control Prevention, Fort Collins, CO USA
SO Emerging Infectious Diseases, (1996) Vol. 2, No. 2, pp. 136-140. ISSN: 1080-6040.
DT Article
LA English

L2 ANSWER 20 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1995:285753 BIOSIS
DN PREV199598300053
TI Cerebrospinal fluid markers of CNS invasion in early Lyme disease.
AU Coyle, P. K.; Krupp, L. B.; Deng, Z.; Belman, A. L.; ***Dattwyler, R.*** *** J.*** ; Luft, B. J.

CS Stony Brook, NY USA
SO Neurology, (1995) Vol. 45, No. 4 SUPPL. 4, pp. A438-A439.
Meeting Info.: 47th Annual Meeting of the American Academy of Neurology
Seattle, Washington, USA May 6-13, 1995
ISSN: 0028-3878.
DT Conference
LA English

L2 ANSWER 21 OF 102 CABA COPYRIGHT 2002 CABI DUPLICATE 12
AN 95:155000 CABA
DN 950504866
TI The 10 most common questions about Lyme disease
AU ***Dattwyler, R. J.*** ; Korobow, A.
CS Division of Allergy, Rheumatology and Clinical Immunology, Department of Medicine, Stony Brook Health Sciences Center, Stony Brook, NY 11794-8161, USA.
SO Infectious Diseases in Clinical Practice, (1995) Vol. 4, No. 2, pp. 104-106.
ISSN: 1056-9103
DT Journal
LA English
AB The following questions, which are often asked by doctors, are answered: In Lyme disease, which organ systems become involved and do they always become involved in a specific order? If someone has been bitten by an Ixodes tick in an endemic area, do I treat them empirically? Is there variability in the classic, characteristic skin lesion, and if so how often? Which ticks carry Lyme disease and where are they found? What is the positive predictive value of an ELISA for ***Borrelia*** burgdorferi? If Lyme disease is definitively diagnosed, how should the patient be treated? What do you do for a patient who has Lyme disease but does not respond to any of the appropriate treatments? Is it useful to repeat Lyme serologies whether or not the patient is improved? How do you treat a patient with Lyme disease who is allergic to penicillin and cannot tolerate doxycycline? Are there different strains of B. burgdorferi and does that make any difference?

L2 ANSWER 22 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC. DUPLICATE 13
AN 1995:126774 BIOSIS
DN PREV199598141074
TI Purification of ***Borrelia*** burgdorferi Outer Surface Protein A (OspA) and Analysis of Antibody Binding Domains.
AU Jiang, Wei; Gorevic, Peter D.; ***Dattwyler, Raymond J.*** ; Dunn, John J.; Luft, Benjamin J. (1)
CS (1) Dep. Med., State Univ. N.Y. Stony Brook, Stony Brook, NY 11794-8153 USA
SO Clinical and Diagnostic Laboratory Immunology, (1994) Vol. 1, No. 4, pp. 406-412.
ISSN: 1071-412X.
DT Article
LA English
AB The major outer surface protein, OspA, of ***Borrelia*** burgdorferi is a lipoprotein which is of particular interest because of its potential as a vaccine candidate. However, serotypic and genetic analyses of OspA from both European and North American strains have demonstrated antigenic

and structural heterogeneities. We purified OspA to homogeneity by exploiting its resistance to trypsin digestion. By treating spirochetes with trypsin and then using Triton X-114 extraction and ion-exchange chromatography, we obtained a yield of 2 mg of pure OspA protein per liter of culture. Intrinsic labeling with (14C)palmitic acid confirmed that OspA was lipidated, and partial digestion established lipidation at the amino-terminal end of the molecule. The reactivity of five anti-OspA murine monoclonal antibodies to nine different isolates of B. burgdorferi was ascertained by Western blot (immunoblot) analysis. Purified OspA was fragmented by enzymatic or chemical cleavage, and the monoclonal antibodies were able to define four distinct immunogenic domains. Further resolution of the epitope specificity to determine humoral and cellular immune responses to OspA has implications for vaccine development and for the utility of this protein as a reagent in diagnostic testing for Lyme ***borreliosis*** .

L2 ANSWER 23 OF 102 CABA COPYRIGHT 2002 CABI DUPLICATE 14
AN 96:1905 CABA
DN 950508123
TI Lyme ***borreliosis***
AU Luft, B. J.; Bosler, E. M.; ***Dattwyler, R. J.***
CS Department of Medicine, State University of New York, Stony Brook, NY 11794-8153, USA.
SO International Journal of Antimicrobial Agents, (1994) Vol. 3, No. 4, pp. 251-258. 59 ref.
ISSN: 0924-8579
DT Journal
LA English

L2 ANSWER 24 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC. DUPLICATE 15
AN 1994:18129 BIOSIS
DN PREV199497031129
TI ***Borrelia*** burgdorferi is clonal: Implications for taxonomy and vaccine development.
AU Dykhuizen, Daniel E.; Polin, David S.; Dunn, John J.; Wilske, Bettina; Preac-Mursic, Vera; ***Dattwyler, Raymond J.*** ; Luft, Benjamin J. (1)
CS (1) Dep. Med., Health Sci. Cent., State Univ. New York, Stony Brook, NY 11794 USA
SO Proceedings of the National Academy of Sciences of the United States of America, (1993) Vol. 90, No. 21, pp. 10163-10167.
ISSN: 0027-8424.
DT Article
LA English
AB The chromosomal genes fla and p93 and the ospA gene from a linear plasmid were sequenced from up to 15 isolates of ***Borrelia*** burgdorferi, which causes Lyme ***borreliosis*** in man. Comparison of the gene trees provides no evidence for genetic exchange between chromosomal genes, suggesting B. burgdorferi is strictly clonal. Comparison of the chromosomal gene trees with that of the plasmid-encoded ospA reveals that plasmid transfer between clones is rare. Evidence for intra-genic recombination was found in only a single ospA allele. The analysis reveals three common clones and a number of rare clones that are so highly divergent that vaccines developed against one are unlikely to provide immunity to organisms from others. Consequently, an understanding of the

geographic and genetic variability of B. burgdorferi will prove essential for the development of effective vaccines and programs for control. While the major clones might be regarded as different species, the clonal population structure, the geographic localization, and the widespread incidence of Lyme disease suggest that B. burgdorferi should remain the same for the entire array of organisms.

L2 ANSWER 25 OF 102 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.DUPLICATE 16
AN 93359936 EMBASE
DN 1993359936
TI Occurrence of antibodies to ***Borrelia*** burgdorferi in patients with nonspirochetal subacute bacterial endocarditis.
AU Kaell A.T.; Redecha P.R.; Elkon K.B.; Golightly M.G.; Schulman P.E.; ***Dattwyler R.J.*** ; Kaell D.L.; Inman R.D.; Christian C.L.; Volkman D.J.
CS State University of New York,Stony Brook, NY, United States
SO Annals of Internal Medicine, (1993) 119/11 (1079-1083).
ISSN: 0003-4819 CODEN: AIMEAS
CY United States
DT Journal; Article
FS 004 Microbiology
006 Internal Medicine
026 Immunology, Serology and Transplantation
031 Arthritis and Rheumatism
LA English
SL English
AB Objective: To determine the prevalence and specificity of antibodies to ***Borrelia*** burgdorferi in patients with nonspirochetal subacute bacterial endocarditis and assess whether increased levels of antibodies to B. burgdorferi were attributable to rheumatoid factor. Design: Retrospective case-control study. Setting: Urban referral center in an area devoid of infected ticks as a source of endocarditis sera. Patients: Sera from 30 consecutive patients with culture-proven subacute endocarditis between 1979 and 1981 were compared with 30 control sera collected between 1989 and 1990. In addition, sera from 20 consecutive patients with rheumatoid arthritis who were positive for rheumatoid factor were collected between 1991 and 1992. Sera were compared with a convenience sample from 15 patients who met the criteria for Lyme disease. Measurements: Antibodies to B. burgdorferi were assessed by enzyme-linked immunosorbent assay (ELISA) and immunoblot analysis. IgM rheumatoid factor was quantified using solid-phase radioimmunoassay or latex agglutination techniques. Results: Thirteen of 30 patients with endocarditis (43%) compared with 3 of 30 normal controls (10%) had increased levels of antibodies to B. burgdorferi ($P < 0.01$). Of these 13 patients, only 1 had an immunoblot consistent with previous infection. The others had nonspecific immunoblots: 5 showed isolated 60-kd reactivity; 1 patient had isolated 41-kd reactivity; and 6 had no bands of reactivity. Immunoblots of the 3 controls with increased antibodies showed only isolated 41-kd reactivity. Thus, the specificity of the B. burgdorferi antibody test in patients with endocarditis was only 60% (95% CI, 42% to 78%), compared with 90% (CI, 79% to 100%) in controls. No correlation was noted between IgM rheumatoid factor and antibodies to B. burgdorferi in patients with endocarditis ($r = 0.2$; $P > 0.2$). Only 1 of 20 patients with rheumatoid arthritis without known bacterial infections had antibodies to B. burgdorferi. Conclusions: Although a positive ELISA test for B.

burgdorferi may be a 'true positive,' a positive serologic test alone does not ensure that the clinical problem is due to Lyme ***borreliosis*** . Cross-reactive antibodies to shared epitopes between B. burgdorferi and the endocarditis organism may account for the high false-positive results.

L2 ANSWER 26 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 17
AN 1993:411001 BIOSIS
DN PREV199396076726
TI Cross-reactive antigenic domains of the flagellin protein of ***Borrelia*** burgdorferi.
AU Luft, B. J. (1); Dunn, J. J.; ***Dattwyler, R. J.*** ; Gorgone, G.; Gorevic, P. D.; Schubach, W. H.
CS (1) Dep. Med., HSC 15T-080, State Univ. New York, Stony Brook, NY 11794 USA
SO Research in Microbiology, (1993) Vol. 144, No. 4, pp. 251-257.
ISSN: 0923-2508.
DT Article
LA English
SL English; French
AB The p41 flagellin of ***Borrelia*** burgdorferi is the most common antigen recognized by serum of patients with Lyme ***borreliosis*** . This antigen shares amino acid homology, particularly in the amino and carboxy termini, with periflagellar antigens found in other microorganisms including Treponema pallidum. We cloned and expressed the p41 open reading frame in Escherichia coli and expressed it both as TrpE fusion and full-length unfused protein. Also, we generated deletion constructs of various portions of the gene. Sera from patients with late Lyme ***borreliosis*** and secondary syphilis were used to identify the recombinant protein by immunoblot analysis. Sera from 26 patients with Lyme ***borreliosis*** , 20 with secondary syphilis and 10 controls were used to identify cross-reactive domains of the B. burgdorferi flagellin. The variable region (amino acids 131-234) of the protein was recognized by 59% (15/26) of patients with late Lyme ***borreliosis*** compared to 30% (6/20) of patients with secondary syphilis and no (0/10) control patients. It appears that cross-reactive epitopes between B. burgdorferi and T. pallidum extend to the variable region of the flagellin.

L2 ANSWER 27 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1993:314234 BIOSIS
DN PREV199345020759
TI Cerebrospinal fluid findings in North American Lyme disease.
AU Coyle, P. K.; ***Dattwyler, R. J.*** ; Krupp, L. B.; Belman, A. L.; Benach, J. L.; Luft, B. J.
CS Stony Brook, NY USA
SO Neurology, (1993) Vol. 43, No. 4 SUPPL. 2, pp. A218-A219.
Meeting Info.: 45th Annual Meeting of the American Academy of Neurology New York, New York, USA April 25-May 1, 1993
ISSN: 0028-3878.
DT Conference
LA English

L2 ANSWER 28 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 18

AN 1994:8904 BIOSIS
DN PREV199497021904
TI Epitope mapping of outer surface protein A (Osp) of ***Borrelia***
Burgdorferi (Bb): A candidate protein in vaccine development.
AU Gorevic, Peter D. (1); ***Dattwyler, Raymond J.*** ; Dunn, John J.;
Jiang, Wei; Gorgone, Gina; Luft, Benjamin J.
CS (1) Brookhaven Natl. Lab., Stony Brook, NY 11794 USA
SO Arthritis and Rheumatism, (1993) Vol. 36, No. 9 SUPPL., pp. S41.
Meeting Info.: 57th Annual Scientific Meeting of the American College of
Rheumatology San Antonio, Texas, USA November 7-11, 1993
ISSN: 0004-3591.
DT Conference
LA English

L2 ANSWER 29 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 19
AN 1992:523977 BIOSIS
DN BA94:132052
TI THE 93-KILODALTON PROTEIN OF ***BORRELIA*** -BURGDORFERI AN
IMMUNODOMINANT PROTOPLASMIC CYLINDER ANTIGEN.
AU LUFT B J; MUDRI S; JIANG W; ***DATTWYLER R J*** ; GOREVIC P D; FISCHER
T; MUNOZ P; DUNN J J; SCHUBACH W H
CS DEP. MED., STATE UNIVERSITY NEW YORK STONY BROOK, STONY BROOK, NEW YORK
11794-8153.
SO INFECT IMMUN, (1992) 60 (10), 4309-4321.
CODEN: INFIBR. ISSN: 0019-9567.
FS BA; OLD
LA English
AB Using immunoblots, we identified proteins of ***Borrelia***
burgdorferi recognized by sera from 62 patients with either acute or
chronic Lyme disease. In all groups studied, the 41-kDa flagellar protein
and a relatively minor 93-kDa protein (p93) were the most commonly
recognized antigens in patients with acute and chronic disease due to B.
burgdorferi. A murine monoclonal antibody (MAb 181.1) was developed
against p93, and the antigen was detected by immunoblot analysis in four
European and American strains of B. burdgorferi. On two-dimensional gel
electrophoresis, p93 had an apparent pI of 6.8. Immunoelectronmicroscopy
with MAb 181.1 dmeonstrated that p93 is located within the protoplasmic
cylinder compartment of the organism. The gene encoding p93 was retrieved
from a phage expression library. The derived amino acid sequence of p93
confirmed chemical characterization of the antigen, including its
amino-terminal peptide sequence. The derived amino acid sequence predicted
it to be predominantly alpha helical. A prominent antigenic domain located
at the carboxy portion of the protein was recognized by human and rabbit
polyclonal antisera and human (MAb D4) and mouse (MAb 181.1) MAbs.

L2 ANSWER 30 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 20
AN 1992:478007 BIOSIS
DN BA94:109382
TI ***BORRELIA*** -BURGDORFERI HSP70 HOMOLOG CHARACTERIZATION OF AN
IMMUNOREACTIVE STRESS PROTEIN.
AU ANZOLA J; LUFT B J; GORGONE G; ***DATTWYLER R J*** ; SODERBERG C;
LAHESMAA R; PELTZ G
CS INST. BIOLOGICAL SCI., SYNTEX RES., PALO ALTO, CALIF. 94303.

SO INFECT IMMUN, (1992) 60 (9), 3704-3713.
CODEN: INFIBR. ISSN: 0019-9567.
FS BA; OLD
LA English
AB The gene encoding an immunoreactive ***Borrelia*** burgdorferi HSP70 homolog was isolated and characterized. The predicted amino acid sequence of this spirochetal protein confirms that this gene encodes a member of the HSP70 family of protein. Although there appears to be a single copy of this gene on the spirochetal chromosome, two distinct transcripts hybridizing to the hsp70 probe are detected in RNA isolated from B. burgdorferi. The amount of spirochetal HSP70 RNA transcripts it shown to be thermally regulated. Antibodies in the serum of three lyme arthritis patients and cloned T-cell lines isolated from one patient with Lyme arthritis recognize the expressed recombinant HPS70, indicating that it is an immunologically important spirochetal antigen. Antibodies in a rabbit antiserum, as well as antibodies in the serum of two of three Lyme arthritis patients examined, bound to expressed truncated recombinant HSP70s with 250 amino acids deleted from either the amino or carboxy terminus of the protein. However, antibodies in the serum of three Lyme arthritis patients, which were reactive with spirochetal HSP70, did not cross-react with human HSP70 proteins.

L2 ANSWER 31 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 21
AN 1992:348720 BIOSIS
DN BA94:40945
TI MAPPING THE MAJOR ANTIGENIC DOMAINS OF THE NATIVE FLAGELLAR ANTIGEN OF ***BORRELIA*** -BURGDORFERI.
AU JIANG W; LUFT B J; SCHUBACH W; ***DATTWYLER R J*** ; GOREVIC P D
CS DEP. MEDICINE, STATE UNIVERSITY NEW YORK STONY BROOK, STONY BROOK, N.Y. 11794-8161.
SO J CLIN MICROBIOL, (1992) 30 (6), 1535-1540.
CODEN: JCMIDW. ISSN: 0095-1137.
FS BA; OLD
LA English
AB Purified flagellar protein (p41) of ***Borrelia*** burgdorferi (strain B31) was subjected to chemical cleavage with hydroxylamine or proteolysis with V8 protease, endoproteinase Asp-N, or .alpha.-chymotrypsin. The resulting polypeptides were identified by sodium dodecyl sulfate-polyacrylamide gel electrophoresis, and their positions in the published DNA sequence of the p41 protein were determined by amino-terminal sequencing and amino acid analysis. Epitope specificities of antibody binding by a monoclonal antibody raised by immunization of mice with purified flagella and pooled sera from patients with multiple erythema migrans, late Lyme ***borreliosis*** , or secondary syphilis were analyzed by Western blots (immunoblots) of peptides transferred to Immobilon polyvinylidene difluoride filters. The major epitope binding one murine monoclonal antibody (158) was localized to a carboxy-terminal domain that includes residues 300 to 336. The dominant epitopes binding human polyclonal antibodies are in the central portion of the molecule (residues 182 to 218) that is not conserved compared with other bacterial flagellins. Additional reactive epitopes were identified in the amino-terminal domain of the protein. Sera from patients with syphilis bound strongly to the amino-terminal conserved domain, providing a structural basis for cross-reactivity seen in standard enzyme-linked

immunosorbent assays, but not to the central part of the molecules. Specific and cross-reactive antigenic determinants need to be considered in the design of improved immunodiagnostics for spirochetal diseases.

L2 ANSWER 32 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 22
AN 1992:212610 BIOSIS
DN BA93:112835
TI INVASION OF THE CENTRAL NERVOUS SYSTEM BY ***BORRELIA*** -BURGDORFERI IN ACUTE DISSEMINATED INFECTION.
AU LUFT B J; STEINMAN C R; NEIMARK H C; MURALIDHAR B; RUSH T; FINKEL M F; KUNKEL M; ***DATTWYLER R J***
CS SUNY STONY BROOK, HSC, T-15, 080, STONY BROOK, N.Y. 11794-8153.
SO JAMA (J AM MED ASSOC), (1992) 267 (10), 1364-1367.
CODEN: JAMAAP. ISSN: 0098-7484.
FS BA; OLD
LA English
AB Objective: To determine central nervous system (CNS) involvement in acutely disseminated ***Borrelia*** burgdorferi infection by measurement of ***borrelia*** -specific DNA using the polymerase chain-reaction (PCR) assay and to compare the results of this with standard serological tests. Design: Prospective study with laboratory investigators blinded to clinical data. Setting: Multicenter office practice with a central reference laboratory. Patients: Cerebrospinal fluid (CSF) was collected from 12 patients with acute disseminated Lyme ***borreliosis*** with less than 2 weeks of active disease. The normal cohort specimens came from 16 patients whose CSF samples had been sent to the clinical laboratory for tests unrelated to the present study. Main Outcome Measures: Clinical evidence of disease and laboratory abnormalities. Results: Eight of the 12 patients (four of six with multiple areas of erythema migrans and four of six with cranial neuritis without erythema migrans) had B. burgdorferi-specific DNA in their CSF. Among the 12 patients studied, nine had acute cranial neuritis and six had multiple erythema migrans lesions. Just four of the eight who were found to have spirochetal DNA in their CSF had complaints suggestive of CNS infection. In three of the PCR-positive CSF samples, no other abnormalities were noted. None of 16 samples from controls were positive in the PCR assay. Conclusion: B. burgdorferi can invade the CNS early in the course of infection. Careful consideration should be given to choosing antibiotics that achieve adequate CSF levels in patients with disseminated infection.

L2 ANSWER 33 OF 102 SCISEARCH COPYRIGHT 2002 ISI (R)
AN 92:480975 SCISEARCH
GA The Genuine Article (R) Number: JH588
TI ***BORRELIA*** -BURGDORFERI IN THE CENTRAL-NERVOUS-SYSTEM - REPLY
AU LUFT B J (Reprint); ***DATTWYLER R J***
CS SUNY STONY BROOK, STONY BROOK, NY, 11794 (Reprint)
CYA USA
SO JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, (19 AUG 1992) Vol. 268, No. 7, pp. 873.
ISSN: 0098-7484.
DT Letter; Journal
FS LIFE; CLIN
LA ENGLISH

REC No References

L2 ANSWER 34 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 23
AN 1992:440725 BIOSIS
DN BR43:73725
TI ***BORRELIA*** -BURGDORFERI IN THE CENTRAL NERVOUS SYSTEM AND REPLY.
AU BENACH J L; CAMERON D J; DONNENBERG M S; LUFT B J; ***DATTWYLER R J***
CS STATE UNIVERSITY NEW YORK, STONY BROOK, N.Y.
SO JAMA, J. Am. Med. Assoc., (1992) 268 (7), 872-873.
CODEN: JAMAAP. ISSN: 0098-7484.
FS BR; OLD
LA English

L2 ANSWER 35 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1993:154467 BIOSIS
DN PREV199344073267
TI Diagnosis of Lyme ***borreliosis*** .
AU Luft, B. J. (1); Bosler, E. M. (1); ***Dattwyler, R. J.***
CS (1) Div. Infectious Diseases, SUNY Stony Brook, Stony Brook, NY 11794 USA
SO Schutzer, S. E. [Editor]. Current Communications in Cell and Molecular Biology, (1992) Vol. 6, pp. 317-324. Current Communications in Cell and Molecular Biology; Lyme disease: Molecular and immunologic approaches.
Publisher: Cold Spring Harbor Laboratory Press 10 Skyline Drive, Plainview, New York 11803, USA.
Meeting Info.: Symposium Cold Spring Harbor, New York, USA April 1991
ISSN: 1063-8806. ISBN: 0-87969-377-0.
DT Article
LA English

L2 ANSWER 36 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1993:240648 BIOSIS
DN PREV199344113848
TI Treatment of Lyme arthritis.
AU ***Dattwyler, Raymond J.***
CS SUNY at Stony Brook, Dep. Med., Div. Allergy Rheumatol. Clin. Immunol., Stony Brook, NY 11794-8161 USA
SO Balint, G. [Editor]; Gomor, B. [Editor]; Hodinka, L. [Editor]. International Congress Series, (1992) No. 984, pp. 272-274. International Congress Series; Rheumatology, state of the art.
Publisher: Excerpta Medica 305 Keizersgracht, PO Box 1126, Amsterdam, Netherlands.
Meeting Info.: XIIth European Congress of Rheumatology Budapest, Hungary June 30-July 6, 1991
ISSN: 0531-5131. ISBN: 0-444-81212-1.
DT Article
LA English

L2 ANSWER 37 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1993:19439 BIOSIS
DN PREV199344007639
TI Lyme arthritis, a prospective study on the effect of treatment on the serologic response.
AU ***Dattwyler, Raymond J. (1)*** ; Luft, Benjamin J. (1); Gorevic, Peter D. (1); Dunn, John

CS (1) State Univ. New York, Stony Brook, N.Y. 11794
SO Arthritis & Rheumatism, (1992) Vol. 35, No. 9 SUPPL., pp. S183.
Meeting Info.: 56th Annual Scientific Meeting of the American College of Rheumatology, Atlanta, Georgia, USA, October 11-15, 1992. ARTHRITIS RHEUM ISSN: 0004-3591.
DT Conference
LA English

L2 ANSWER 38 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 24
AN 1992:357142 BIOSIS
DN BR43:35292
TI COMPLICATIONS OF LYME ***BORRELIOSIS*** .
AU COOKE W D; ***DATTWYLER R J***
CS GUTHIRE FOUND. MED. RES., SAYRE, PA. 18840, USA.
SO CREGER, W. P. (ED.). ANNUAL REVIEW OF MEDICINE, VOL. 43. IX+576P. ANNUAL REVIEWS INC.: PALO ALTO, CALIFORNIA, USA. ILLUS. (1992) 0 (0), 93-103.
CODEN: ARMCAH. ISSN: 0066-4219. ISBN: 0-8243-0543-4.
FS BR; OLD
LA English

L2 ANSWER 39 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 25
AN 1991:295759 BIOSIS
DN BA92:16774
TI IMMUNOLOGIC AND STRUCTURAL CHARACTERIZATION OF THE DOMINANT 66 TO 73-KDA ANTIGENS OF ***BORRELIA*** -BURGDORFERI.
AU LUFT B J; GOREVIC P D; JIANG W; MUNOZ P; ***DATTWYLER R J***
CS DEP. MED., HSC T-15, ROOM 080, SUNY AT STONY BROOK, STONY BROOK, NY 11794.
SO J IMMUNOL, (1991) 146 (8), 2776-2782.
CODEN: JOIMA3. ISSN: 0022-1767.
FS BA; OLD
LA English
AB The 66- and 73-kDa proteins of ***Borrelia*** burgdorferi are dominant immunogens and expressed in all strains of B. burgdorferi. The humoral response to these Ag occurs relatively early during the course of infection. Two-dimensional Western blot analysis of this group of Ag revealed them to consist of a tetrad of proteins with apparent molecular mass of 66, 68, 71, and 73 kDa. Furthermore, in this study we demonstrate the 66-kDa protein to be a potent inducer of lymphoproliferation in the patient immune to B. burgdorferi. Monospecific polyclonal antibodies and mAb demonstrate that each of these proteins was immunologically distinct. However, direct amino acid sequence of the 66-0 and 68-kDa Ag was almost identical and had a high level of sequence similarity to the GroEL heat-shock protein (Hsp60) of Escherichia coli and the 60-kDa immunodominant protein of Treponema pallidum. The amino terminal sequence of the 71- and 73-kDa proteins of B. burgdorferi was almost identical and these proteins are remarkable sequence similarity to the DnaK heat-shock protein of E. coli (Hsp70). It appears likely, therefore, that proteins related to the heat-shock family are potent immunogens of B. burdorferi.

L2 ANSWER 40 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 26
AN 1991:341574 BIOSIS
DN BA92:40949

TI MAPPING ANTIBODY-BINDING DOMAINS OF THE MAJOR OUTER SURFACE MEMBRANE PROTEIN OSPA OF ***BORRELIA*** -BURGDORFERI.
AU SCHUBACH W H; MUDRI S; ***DATTWYLER R J*** ; LUFT B J
CS DEP MED., STATE UNIV. NEW YORK STONY BROOK, STONY BROOK, N.Y. 11794.
SO INFECT IMMUN, (1991) 59 (6), 1911-1915.
CODEN: INFIBR. ISSN: 0019-9567.
FS BA; OLD
LA English
AB The major outer surface membrane protein of ***Borrelia*** burgdorferi, OspA, is one of several antigens recognized by sera from some patients in the chronic phase of Lyme ***borreliosis*** . We have expressed the OspA open reading frame in Escherichia coli and generated a series of deletion constructs of the gene and expressed them as trpE fusion proteins in E. coli. These constructs were used to identify antibody-binding sites of both rabbit antiserum and mouse monoclonal antibodies (MAbs) directed against OspA. All antibodies tested failed to bind to a fusion protein containing the first 61 amino acids of OspA, suggesting that the amino-terminal domain of OspA is unexposed to the cell surface. The binding site for one MAb, 184.1, was identified in a region centered around amino acid 61, while the binding site for MAb 105.5 was identified in a region centered around amino acids 214 to 217. Sera from two patients which were reactive to OspA identified distinct epitopes that lie between those recognized by our MAbs.

L2 ANSWER 41 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 27
AN 1991:377640 BIOSIS
DN BR41:50030
TI THE 93KD PROTEIN OF ***BORRELIA*** -BURGDORFERI CHARACTERIZATION AND CLONING OF AN IMMUNODOMINANT PROTOPLASMIC CYLINDER ANTIGEN.
AU LUFT B J; JIANG W; GOREVIC P D; MUDRI S; FISHER T; ***DATTWYLER R J*** ; SCHUBACH W H
CS DEP. MEDICINE, SUNY STONY BROOK, STONY BROOK, N.Y.
SO JOINT MEETING OF THE ASSOCIATION OF AMERICAN PHYSICIANS, THE AMERICAN SOCIETY FOR CLINICAL INVESTIGATION, AND THE AMERICAN FEDERATION FOR CLINICAL RESEARCH, SEATTLE, WASHINGTON, USA, MAY 3-6, 1991. CLIN RES. (1991) 39 (2), 440A.
CODEN: CLREAS. ISSN: 0009-9279.
DT Conference
FS BR; OLD
LA English

L2 ANSWER 42 OF 102 CABA COPYRIGHT 2002 CABI
AN 92:62583 CABA
DN 920510377
TI Overview of the clinical manifestations of ***Borrelia*** burgdorferi infection
AU ***Dattwyler, R. J.*** ; Luft, B. J.
CS Department of Medicine, SUNY at Stony Brook Health Sciences Center, Stony Brook, NY 11794-8161, USA.
SO Canadian Journal of Infectious Diseases, (1991) Vol. 2, No. 2, pp. 61-63.
In Consensus conference on Lyme disease, January 15-16, 1991, Guelph, Ontario. 9 ref.
ISSN: 1180-2332
DT Journal; Conference Article

LA English
SL French
AB Lyme disease has classically been divided into 3 stages: erythema migrans; neurological or cardiac involvement; and arthritis. Rather than defining a set disease pattern, one should conceptualize a progressive infection that may be localized or disseminated, acute or chronic. Erythema migrans, the earliest and most easily recognized manifestation of B. burgdorferi infection, is an expanding annular erythematous skin lesion with a central clearing that develops soon after the bite of an infected ixodid tick. Musculoskeletal manifestations are common, with approx. 50% of untreated individuals developing arthritis. Of these, only 10% have chronic arthritis. Invasion of the CNS occurs as the infection disseminates haematogenously, with encephalitis, myelitis and meningopolyneuritis being the most severe results. Acute cardiac involvement is recognized in up to 8% of adult patients and less often in children. Early antibiotic treatment of the infection is highly effective.

L2 ANSWER 43 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1992:18559 BIOSIS
DN BR42:6259
TI EPITOPE MAPPING OF P41 IMMUNODOMINANT FLAGELLAR ANTIGEN OF ***BORRELIA*** -BURGDORFERI IN EARLY AND LATE LYME ***BORRELIOSIS*** LB.
AU GOREVIC P D; ***DATTWYLER R J*** ; SHUBACH W H; DUNN J; LUFT B J; JIANG W; GORGONE G
CS SUNY, STONY BROOK, N.Y. 11794, USA.
SO 55TH ANNUAL MEETING OF THE AMERICAN COLLEGE OF RHEUMATOLOGY, BOSTON, MASSACHUSETTS, USA, NOVEMBER 17-21, 1991. ARTHRITIS RHEUM. (1991) 34 (9 SUPPL), S49.
CODEN: ARHEAW. ISSN: 0004-3591.
DT Conference
FS BR; OLD
LA English

L2 ANSWER 44 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 28
AN 1990:498780 BIOSIS
DN BA90:127126
TI PENICILLIN-BINDING PROTEINS IN ***BORRELIA*** -BURGDORFERI.
AU URBAN C; RAHAL J J; ***DATTWYLLER R J*** ; GOREVIC P; LUFT B J
CS DEP. MED., BOOTH MEMORIAL MED. CENT., FLUSHING, N.Y. 11355.
SO J BACTERIOL, (1990) 172 (10), 6139-6141.
CODEN: JOBAAY. ISSN: 0021-9193.
FS BA; OLD
LA English
AB Penicillin-binding proteins were identified in ***Borrelia*** burgdorferi membranes. A 94-kilodalton penicillin-binding protein was the first to be labeled with tritiated penicillin and was the first band to disappear in a competition experiment. Its binding ability was destroyed when membranes were preboiled. In addition, several of these penicillin-binding proteins comigrated with bands previously identified as surface proteins.

L2 ANSWER 45 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 29

AN 1991:71418 BIOSIS
DN BA91:40078
TI POSITIVE LYME SEROLOGY IN SUBACUTE BACTERIAL ENDOCARDITIS A STUDY OF FOUR PATIENTS.
AU KAELL A T; VOLKMAN D J; GOREVIC P D; ***DATTWYLER R J***
CS DIVISION ALLERGY RHEUMATOLOGY CLINICAL IMMUNOLOGY, SUNY HSC T-16040, STONY BROOK, N.Y. 11794-8161.
SO JAMA (J AM MED ASSOC), (1990) 264 (22), 2916-2918.
CODEN: JAMAAP. ISSN: 0098-7484.
FS BA; OLD
LA English
AB Lyme ***borreliosis*** is a multisystem inflammatory disorder caused by the tick-borne spirochete ***Borrelia*** burgdorferi. Clinical manifestations are protean, involving the skin, joints, peripheral and central nervous systems, and the heart. However, the presentation of Lyme disease often overlaps with that of other conditions. We describe four patients from a region endemic for Lyme disease who had elevated levels of antibodies reactive to B. burgdorferi and whose signs and symptoms were initially attributed to Lyme ***borreliosis*** but whose subsequent blood cultures established a diagnosis of nonspirochetal subacute bacterial endocarditis. Although immunoblots on serum samples from three of the four patients were consistent with prior infection from B burgdorferi, a positive immunoblot does not establish active infection. Similarly, seropositivity to B burgdorferi only indicates possible exposure to this organism. The occurrence of positive serologies to B burgdorferi in the presence of other diseases can lead to diagnostic confusion.

L2 ANSWER 46 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 30
AN 1991:88916 BIOSIS
DN BA91:47806
TI AMOXYCILLIN PLUS PROBENECID VERSUS DOXYCYCLINE FOR TREATMENT OF ERYTHEMA MIGRANS ***BORRELIOSIS*** .
AU ***DATTWYLER R J*** ; VOLKMAN D J; CONATY S M; PLATKIN S P; LUFT B J
CS DEP. MEDICINE, HEALTH SCIENCE CENTRE, STATE UNIVERSITY NEW YORK STONY BROOK, STONY BROOK, N.Y. 11794-8161, USA.
SO LANCET (N AM ED), (1990) 336 (8728), 1404-1406.
CODEN: LANAAI.
FS BA; OLD
LA English
AB 72 adults with erythema migrans (early Lyme ***borreliosis***) were enrolled in a randomised prospective trial comparing amoxycillin 500 mg plus probenecid 500 mg three times a day with doxycycline 100 mg twice a day for 21 days. These antibiotic regimens were chosen because of the known in-vitro sensitivity of ***Borrelia*** burgdorferi, the antibiotic tissue penetration, the pharmacokinetics of the drugs, and because the organism can disseminate early in the course of infection. 72 patients were evaluable (35 in the doxycycline group and 37 in the amoxycillin/probenecid group). The two regimens were equally effective for treatment of erythema migrans. Mild fatigue or arthralgia were the only post-treatment complaints, which resolved within 6 months. None of the patients needed further antibiotic treatment for Lyme ***borreliosis***

L2 ANSWER 47 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 31
AN 1990:472949 BIOSIS
DN BA90:112369
TI LYME NEUROBORRELIOSIS PERIPHERAL NERVOUS SYSTEM MANIFESTATIONS.
AU HALPERIN J; LUFT B J; VOLKMAN D J; ***DATTWYLER R J***
CS DEP. NEUROL., HSC T12-020, STATE UNIV. NEW YORK, STONY BROOK, N.Y. 11794, USA.
SO BRAIN, (1990) 113 (4), 1207-1222.
CODEN: BRAIAK. ISSN: 0006-8950.
FS BA; OLD
LA English
AB An ever increasing number of apparently unrelated peripheral nervous system (PNS) disorders has been associated with Lyme ***borreliosis*** . To ascertain their relative frequency and significance, we studied prospectively 74 consecutive patients with late Lyme disease, with and without PNS symptoms: 53% had intermittent limb paraesthesiae, 25% the carpal tunnel syndrome, 8% painful radiculopathy, and 3% Bell's palsy; 39% had disseminated neurophysiological abnormalities. To assess the interrelationships among these syndromes, we reviewed the neurophysiological findings in all 163 such patients that we have studied to date. Reversible abnormalities of distal conduction were the most common finding. Demyelinating neuropathy was extremely rare. The pattern of abnormality was similar in all patient groups, regardless of whether the symptoms suggested radiculopathy, Bell's palsy, or neuropathy. We conclude that reversible PNS abnormalities occur in one-third of our patients with late Lyme ***borreliosis*** , and the pattern of electrophysiological abnormalities is the same in all and is indicative of widespread axonal damage, suggesting that these different presentations reflect varying manifestations of the same pathological process.

L2 ANSWER 48 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 32
AN 1990:457685 BIOSIS
DN BR39:93046
TI SPIROCHETAL ARTHRITIS INCLUDING LYME DISEASE.
AU COOKE W D; ***DATTWYLER R J***
CS STATE UNIV. N.Y. AT STONY BROOK, STONY BROOK, N.Y., USA.
SO Curr. Opin. Rheumatol., (1990) 2 (4), 622-627.
CODEN: CORHES.
FS BR; OLD
LA English

L2 ANSWER 49 OF 102 CABA COPYRIGHT 2002 CABI DUPLICATE 33
AN 95:32705 CABA
DN 950800305
TI Immunologic reactivity against ***Borrelia*** burgdorferi in patients with motor neuron disease
AU Halperin, J. J.; Kaplan, G. P.; Brazinsky, S.; Tsai, T. F.; Cheng, T.; Ironside, A.; Wu, P.; Delfiner, J.; Golightly, M.; Brown, R. H.; ***Dattwyler, R. J.*** ; Luft, B. J.
CS Department of Neurology, HSC T12-020, State University of New York, Stony Brook, NY 11794, USA.
SO Archives of Neurology, (1990) Vol. 47, No. 5, pp. 586-594. 42 ref.
ISSN: 0003-9942

DT Journal
LA English
AB Out of 19 patients with amyotrophic lateral sclerosis (ALS) living in Suffolk County, New York, USA, 9 had serological evidence of exposure to ***Borrelia*** burgdorferi. They were all residents of an area of high Lyme disease prevalence. 8/9 seropositive patients were male. All patients had typical ALS. None had typical Lyme disease. Cerebrospinal fluid was examined in 24 ALS patients and 3 appeared to have intrathecal synthesis of anti-B. burgdorferi antibody. Following treatment with antibiotics, 3 patients with predominantly lower motor neurone abnormalities appeared to improve, 3 with severe bulbar dysfunction deteriorated rapidly, and all others appeared unaffected. There appears to be a statistically significant association between ALS and immunoreactivity to B. burgdorferi, at least among men living in hyperendemic areas.

L2 ANSWER 50 OF 102 CABA COPYRIGHT 2002 CABI DUPLICATE 34
AN 90:127609 CABA
DN 900502413
TI The immunology of Lyme ***borreliosis***
AU Finn, A. F., Jr.; ***Dattwyler, R. J.***
CS Department of Medicine, SUNY at Stony Brook, NY 11794, USA.
SO Laboratory Medicine, (1990) Vol. 21, No. 5, pp. 305-309. 68 ref.
ISSN: 0007-5027
DT Journal
LA English

L2 ANSWER 51 OF 102 CABA COPYRIGHT 2002 CABI DUPLICATE 35
AN 90:127606 CABA
DN 900502410
TI Lyme ***borreliosis*** : an overview of the clinical manifestations
AU ***Dattwyler, R. J.***
CS Department of Medicine, Division of Allergy, Rheumatology and Clinical Immunology, SUNY at Stony Brook, NY 11794-8161, USA.
SO Laboratory Medicine, (1990) Vol. 21, No. 5, pp. 290-292. 20 ref.
ISSN: 0007-5027
DT Journal
LA English

L2 ANSWER 52 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC. DUPLICATE 36
AN 1990:109590 BIOSIS
DN BA89:59081
TI CROSS-ANTIGENICITY BETWEEN THE MAJOR SURFACE PROTEINS OSP-A AND OSP-B AND OTHER PROTEINS OF ***BORRELIA*** -BURGDORFERI.
AU JIANG W; LUFT B J; MUNOZ P; ***DATTWYLER R J*** ; GOREVIC P D
CS DEP. MED., STATE UNIV. NEW YORK AT STONY BROOK, STONY BROOK, N.Y. 11794.
SO J IMMUNOL, (1990) 144 (1), 284-289.
CODEN: JOIMA3. ISSN: 0022-1767.
FS BA; OLD
LA English
AB Two of the major surface Ag of ***Borrelia*** burgdorferi, the 31-kDa OspA and 34-kDa OspB proteins, are encoded by a 49-kb plasmid. In this study, mAb and monospecific polyclonal antibodies were used to define cross-antigenicity of the OpsA and OspB protein to each other and to other lower molecular mass proteins by Western Blot analysis. Two mAb studied,

105.5 and 184.1, were directed predominantly against the 31-kDa OspA protein. However, each also reacted with other minor bands, though with different specificities. Using V8 protease digestion and cleavage by cyanogen bromide, we demonstrated that each mAb reacted to the 31-kDa protein differently. Monospecific polyclonal rabbit and human antibodies directed against the 34-, 31-, 22-, and 20-kDa proteins were eluted from blots and used to further corroborate the cross-reactivity among these Ag. Rabbit antibodies to the 31- and 22-kDa Ag gave remarkably similar peptide maps after V8 protease digestion of the 31-kDa OspA protein, as did mAb 184.1, sugesting that this mAb recognized an immunodominant epitope common to the 22- and 31-kDa proteins. It seems likely therefore that the humoral immune response to ***Borrelia*** surface Ag may be due to a limited number of cross-reactive epitopes on distinct, but related, gene products.

L2 ANSWER 53 OF 102 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
AN 90033274 EMBASE
DN 1990033274
TI CNS Lyme disease (Reply).
AU Halperin J.J.; Luft B.J.; Volkman D.J.; ***Dattwyler R.J.***
CS United States
SO Neurology, (1990) 40/1 (190-191).
ISSN: 0028-3878 CODEN: NEURAI
CY United States
DT Journal; Letter
FS 006 Internal Medicine
008 Neurology and Neurosurgery
032 Psychiatry
LA English

L2 ANSWER 54 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1991:63040 BIOSIS
DN BR40:28395
TI MOLECULAR HETEROGENEITY BETWEEN DIFFERENT ISOLATES OF ***BORRELIA*** -BURGDORFERI.
AU GOREVIC P D; ***DATTWYLER R J*** ; JIANG W; GORGONE G; MUNOZ P C; LUFT B J
CS SUNY, STONY BROOK, N.Y. 11794.
SO 54TH ANNUAL MEETING OF THE AMERICAN COLLEGE OF RHEUMATOLOGY, SEATTLE, WASHINGTON, USA, OCTOBER 27-NOVEMBER 1, 1990. ARTHRITIS RHEUM. (1990) 33 (9 SUPPL), S85.
CODEN: ARHEAW. ISSN: 0004-3591.
DT Conference
FS BR; OLD
LA English

L2 ANSWER 55 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1991:63039 BIOSIS
DN BR40:28394
TI AMOXICILLIN PLUS PROBENECID COMPARED TO DOXYCYCLINE FOR THE TREATMENT OF ERYTHEMA MIGRANS EM.
AU ***DATTWYLER R J*** ; VOLKMAN D; CONATY S; GOREVIC P; LUFT B
SO 54TH ANNUAL MEETING OF THE AMERICAN COLLEGE OF RHEUMATOLOGY, SEATTLE, WASHINGTON, USA, OCTOBER 27-NOVEMBER 1, 1990. ARTHRITIS RHEUM. (1990) 33 (9 SUPPL), S85.
CODEN: ARHEAW. ISSN: 0004-3591.

DT Conference
FS BR; OLD
LA English

L2 ANSWER 56 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1991:63037 BIOSIS
DN BR40:28392
TI ANTIBODIES TO ***BORRELIA*** -BURGDORFERI RECOGNIZE EPITOPES ON TREPONEMA-DENTICOLA.
AU COOKE W D; LUFT B J; MCNAMARA T F; GOLIGHTLY M; GOREVIC P D; ***DATTWYLER R J***
SO 54TH ANNUAL MEETING OF THE AMERICAN COLLEGE OF RHEUMATOLOGY, SEATTLE, WASHINGTON, USA, OCTOBER 27-NOVEMBER 1, 1990. ARTHRITIS RHEUM. (1990) 33 (9 SUPPL), S84.
CODEN: ARHEAW. ISSN: 0004-3591.
DT Conference
FS BR; OLD
LA English

L2 ANSWER 57 OF 102 LIFESCI COPYRIGHT 2002 CSA
AN 90:83876 LIFESCI
TI Lyme neuroborreliosis: Peripheral nervous system manifestations.
AU Halperin, J.; Luft, B.J.; Volkman, D.J.; ***Dattwyler, R.J.***
CS Dep. Neurol., HSC T12-020, State Univ. New York, Stony Brook, NY 11794, USA
SO BRAIN., (1990) vol. 113, no. 1, pt. 4, pp. 1207-1221.
DT Journal
FS J
LA English
SL English
AB An ever increasing number of apparently unrelated peripheral nervous system (PNS) disorders has been associated with Lyme ***borreliosis*** . To ascertain their relative frequency and significance, we studied prospectively 74 consecutive patients with late Lyme disease, with and without PNS symptoms: 53% had intermittent limb paraesthesiae, 25% the carpal tunnel syndrome, 8% painful radiculopathy, and 3% Bell's palsy; 39% had disseminated neurophysiological abnormalities. To assess the interrelationships among these syndromes, we reviewed the neurophysiological findings in all 163 such patients that we have studied to date. Reversible abnormalities of distal conduction were the most common finding. Demyelinating neuropathy was extremely rare. The pattern of abnormality was similar in all patient groups, regardless of whether the symptoms suggested radiculopathy, Bell's palsy, or neuropathy.

L2 ANSWER 58 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 37
AN 1990:4278 BIOSIS
DN BA89:4278
TI BIOCHEMICAL AND IMMUNOLOGICAL CHARACTERIZATION OF THE SURFACE PROTEINS OF ***BORRELIA*** -BURGDORFERI.
AU LUFT B J; JIANG W; MUNOZ P; ***DATTWYLER R J*** ; GOREVIC P D
CS DEP. MED., STATE UNIV. NEW YORK AT STONY BROOK, STONY BROOK, NEW YORK 11794.
SO INFECT IMMUN, (1989) 57 (11), 3637-3645.
CODEN: INFIBR. ISSN: 0019-9567.

FS BA; OLD
LA English
AB The immunodominant proteins and glycoproteins of ***Borrelia*** burgdorferi were analyzed by one-dimensional (1D) and 2D gel electrophoresis. More than 100 polypeptide species could be detected on silver-stained 2D gels. Separation of sonic extracts of the organism by differential centrifugation (100,000 .times. g) revealed several of the major proteins to reside predominantly within the pellet fraction. The antigenicity of the individual polypeptides was determined by Western (immuno-) blot analysis with sera from humans with chronic Lyme disease and from rabbits immunized with B. burgdorferi. Surface proteins of viable B. burgdorferi labeled with 125I or long-arm hydroxysuccinimide biotin were identified gel analyses. Thirteen major surface proteins were apparent, including the highly immunogenic 41-kilodalton (kDa) endoflagellar antigen. Two of these proteins, with molecular masses of 22 and 41 kDa, were further characterized by electroblotting and microsequencing their amino termini. Significant (35%) homology between the first 20 amino acids of the 22-kDa protein and the deduced amino acid sequence of the 31-kDa (outer surface protein A) protein of B. burgdorferi may indicate that these proteins are processed similarly or are part of a gene family expressed at the surface of the organism. In addition, highly significant (88%) homology was found between the first nine amino acids of the 41-kDa protein of B. burgdorferi and the 33-kDa endoflagellar protein of Treponema pallidum, after which the sequences diverge. This observation provides in part a structural basis for the observed cross-reactivity between the two organisms and suggests alternative approaches to the development of specific immunodiagnostics.

L2 ANSWER 59 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 38
AN 1990:23685 BIOSIS
DN BR38:12985
TI A PERSPECTIVE ON THE TREATMENT OF LYME ***BORRELIOSIS*** .
AU LUFT B J; GOREVIC P D; HALPERIN J J; VOLKMAN D J; ***DATTWYLER R J***
CS DEP. MED., HEALTH SCI. CENT., T-15, 080, STATE UNIV. N.Y. STONY BROOK, N.Y. 11794-8153.
SO SYMPOSIUM ON LYME DISEASE AND OTHER SPIROCHETAL DISEASES, WASHINGTON, D.C., USA, FEBRUARY 29-MARCH 1, 1988. REV INFECT DIS. (1989) 11 (SUPPL 6), S1518-S1525.
CODEN: RINDDG. ISSN: 0162-0886.
DT Conference
FS BR; OLD
LA English

L2 ANSWER 60 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 39
AN 1990:23681 BIOSIS
DN BR38:12981
TI IMMUNOLOGIC ASPECTS OF LYME ***BORRELIOSIS*** .
AU ***DATTWYLER R J*** ; VOLKMAN D J; LUFT B J
CS SUNY STONY BROOK, HSC T16, ROOM 040, STONY BROOK, N.Y. 11724-8161.
SO SYMPOSIUM ON LYME DISEASE AND OTHER SPIROCHETAL DISEASES, WASHINGTON, D.C., USA, FEBRUARY 29-MARCH 1, 1988. REV INFECT DIS. (1989) 11 (SUPPL 6), S1494-S1498.
CODEN: RINDDG. ISSN: 0162-0886.

DT Conference
FS BR; OLD
LA English

L2 ANSWER 61 OF 102 SCISEARCH COPYRIGHT 2002 ISI (R)
AN 89:566894 SCISEARCH
GA The Genuine Article (R) Number: AX146
TI IMMUNOLOGICAL ASPECTS OF LYME ***BORRELIOSIS***
AU ***DATTWYLER R J (Reprint)*** ; VOLKMAN D J; LUFT B J
CS SUNY STONY BROOK, SCH MED, DEPT MED, HSC T16, ROOM 040, STONY BROOK, NY, 11724 (Reprint)
CYA USA
SO REVIEWS OF INFECTIOUS DISEASES, (1989) Vol. 11, pp. S1494-S1498.
DT Article; Journal
FS LIFE; CLIN
LA ENGLISH
REC Reference Count: 41

L2 ANSWER 62 OF 102 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
AN 89128167 EMBASE
DN 1989128167
TI Seronegative Lyme disease.
AU Relman D.A.; Nesher G.; Osborn T.G.; Moore T.L.; Mor F.; Leibovici L.; ***Dattwyler R.J.*** ; Volkman D.J.; Luft B.J.; Halperin J.J.; Thomas J.; Golightly M.G.
CS Stanford University, School of Medicine, Stanford, CA 94305-5402, United States
SO New England Journal of Medicine, (1989) 320/19 (1279-1280).
ISSN: 0028-4793 CODEN: NEJMAG
CY United States
DT Journal
FS 004 Microbiology
LA English

L2 ANSWER 63 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 40
AN 1989:382566 BIOSIS
DN BA88:63156
TI LYME NEUROBORRELIOSIS CENTRAL NERVOUS SYSTEM MANIFESTATIONS.
AU HALPERIN J J; HUFT B J; ANAND A K; ROQUE C T; ALVAREZ O; VOLKMAN D J; ***DATTWYLER R J***
CS DEP. NEUROL., HSC T12-020, SUNY, STONY BROOK, N.Y. 11794.
SO NEUROLOGY, (1989) 39 (6), 753-759.
CODEN: NEURAI. ISSN: 0028-3878.
FS BA; OLD
LA English
AB We evaluated 85 patients with serologic evidence of ***Borrelia*** burgdorferi infection. Manifestations included encephalopathy (41), neuropathy (27), meningitis (2), multiple sclerosis (MS) (6), and psychiatric disorders (3). We performed lumbar punctures in 53, brain MRI in 33, and evoked potentials (EPs) in 33. Only patients with an MS-like illness had abnormal EPs, elevated IgG index, and oligoclonal bands in the cerebrospinal fluid. Twelve of 18 patients with encephalopathy, meningitis, or focal CNS disease had evidence of intrathecal synthesis of anti-B. burgdorferi antibody, compared with no patients with either

MS-like or psychiatric illnesses, and only 2/24 patients with neuropathy. MRIs were abnormal in 7/17 patients with encephalopathy 5/6 patients with an MS-like illness, and no others. We conclude that (1) intrathecal concentration of specific antibody is a useful marker of CNS B. burgdorferi infection; (2) Lyme disease causes an encephalopathy, probably due to infection of the CNS; (3) MS patients with serum immunoreactivity against B. burgdorferi lack evidence of CNS infection with this organism.

L2 ANSWER 64 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 41
AN 1990:57313 BIOSIS
DN BR38:23733
TI TREATMENT OF LYME ***BORRELIOSIS*** .
AU LUFT B J; ***DATTWYLER R J***
CS DIV. INFECT. DIS., HSC T-15, 080, STATE UNIV. N.Y. AT STONY BROOK, NY 11794, USA.
SO Rheum. Dis. Clin. North Am., (1989) 15 (4), 747-756.
CODEN: RDCAEK.
FS BR; OLD
LA English

L2 ANSWER 65 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 42
AN 1990:58134 BIOSIS
DN BR38:24554
TI IMMUNODIAGNOSIS OF LYME ***BORRELIOSIS*** .
AU ***DATTWYLER R J*** ; LUFT B J
CS DEP. MED., HEALTH SCI. CENT. T16, ROOM 040, STATE UNIV. N.Y. AT STONY BROOK, STONY BROOK, N.Y. 11794, USA.
SO Rheum. Dis. Clin. North Am., (1989) 15 (4), 727-734.
CODEN: RDCAEK.
FS BR; OLD
LA English

L2 ANSWER 66 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 43
AN 1990:34302 BIOSIS
DN BR38:13532
TI ANTIBIOTIC TREATMENT OF LYME ***BORRELIOSIS*** .
AU ***DATTWYLER R J*** ; LUFT B J
CS DEP. MED., SUNY STONY BROOK, N.Y. 11794, USA.
SO Biomed. Pharmacother., (1989) 43 (6), 421-426.
CODEN: BIPHEX. ISSN: 0753-3322.
FS BR; OLD
LA English

L2 ANSWER 67 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 44
AN 1989:336401 BIOSIS
DN BA88:39401
TI CARPAL TUNNEL SYNDROME IN LYME ***BORRELIOSIS*** .
AU HALPERIN J J; VOLKMAN D J; LUFT B J; ***DATTWYLER R J***
CS DEP. NEUROLOGY, HSC T12-020, SUNY, STONY BROOK, N.Y. 11794.
SO MUSCLE NERVE, (1989) 12 (5), 397-400.
CODEN: MUNEDE. ISSN: 0148-639X.

FS BA; OLD
LA English
AB Neurophysiologic evidence of median nerve entrapment in the carpal tunnel was present in 25% of patients with late Lyme ***borreliosis*** . Sixty-eight of 76 consecutive, prospectively studied patients with late Lyme underwent neurophysiologic testing. Nineteen reported intermittent hand paresthesias; 17 had neurophysiologically confirmed carpal tunnel syndrome. This was not consistently associated with clinically apparent wrist arthritis or with neurophysiologically evident peripheral neuropathy. We conclude that a significant proportion of patients with late Lyme ***borreliosis*** develop carpal tunnel syndrome.

L2 ANSWER 68 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1989:261514 BIOSIS
DN BR36:128738
TI PERIPHERAL NERVOUS SYSTEM MANIFESTATIONS OF LYME DISEASE.
AU HALPERIN J J; ***DATTWYLER R J***
CS STONY BROOK, N.Y.
SO 41ST ANNUAL MEETING OF THE AMERICAN ACADEMY OF NEUROLOGY, CHICAGO, ILLINOIS, USA, APRIL 13-19, 1989. NEUROLOGY. (1989) 39 (3 SUPPL 1), 304.
CODEN: NEURAI. ISSN: 0028-3878.
DT Conference
FS BR; OLD
LA English

L2 ANSWER 69 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1989:261274 BIOSIS
DN BR36:128498
TI LYME IMMUNOREACTIVITY IN AMYOTROPHIC LATERAL SCLEROSIS.
AU HALPERIN J J; KAPLAN G P; BRAZINSKY S; WU P; DELFINER J; GOLIGHTLY M; BROWN R H; ***DATTWYLER R J*** ; LUFT B J
CS STONY BROOK, N.Y.
SO 41ST ANNUAL MEETING OF THE AMERICAN ACADEMY OF NEUROLOGY, CHICAGO, ILLINOIS, USA, APRIL 13-19, 1989. NEUROLOGY. (1989) 39 (3 SUPPL 1), 234.
CODEN: NEURAI. ISSN: 0028-3878.
DT Conference
FS BR; OLD
LA English

L2 ANSWER 70 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1989:399728 BIOSIS
DN BR37:66376
TI MOLECULAR AND IMMUNOBLOT ANALYSIS OF THE IMMUNODOMINANT ANTIGENS OF ***BORRELIA*** -BURGDORFERI BB IN LYME ***BORRELIOSIS*** LB.
AU GOREVIC P D; JIANG W; MUNOZ P C; ***DATTWYLER R J*** ; LUFT B
CS SUNY-STONY BROOK, N.Y. 11794.
SO 53RD ANNUAL SCIENTIFIC MEETING OF THE AMERICAN COLLEGE OF RHEUMATOLOGY, CINCINNATI, OHIO, USA, JUNE 12-17, 1989. ARTHRITIS RHEUM. (1989) 32 (4 SUPPL), S114.
CODEN: ARHEAW. ISSN: 0004-3591.
DT Conference
FS BR; OLD
LA English

L2 ANSWER 71 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

AN 1989:374684 BIOSIS
DN BR37:53807
TI IDENTIFICATION AND MOLECULAR CHARACTERIZATION OF THE SURFACE PROTEINS OF ***BORRELIA*** -BURGDORFERI.
AU LUFT B J; JIANG W; MUNOZ P; ***DATTWYLER R J*** ; GOREVIC P
CS SUNY AT STONY BROOK, STONY BROOK, N.Y.
SO 89TH ANNUAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY, NEW ORLEANS, LOUISIANA, USA, MAY 14-18, 1989. ABSTR ANNU MEET AM SOC MICROBIOL. (1989) 89 (0), 91.
CODEN: ASMACK. ISSN: 0094-8519.
DT Conference
FS BR; OLD
LA English

L2 ANSWER 72 OF 102 LIFESCI COPYRIGHT 2002 CSA DUPLICATE 45
AN 89:113722 LIFESCI
TI Lyme ***borreliosis*** .
AU Luft, B.J.; ***Dattwyler, R.J.***
CS State Univ. New York, Stony Brook, NY 11790, USA
SO CURR. CLIN. TOP. INFECT. DIS., (1989) vol. 10, pp. 56-81.
DT Journal
FS J
LA English

L2 ANSWER 73 OF 102 CABA COPYRIGHT 2002 CABI
AN 93:129410 CABA
DN 930518199
TI A perspective on the treatment of Lyme ***borreliosis***
AU Luft, B. J.; Gorevic, P. D.; Halperin, J. J.; Volkman, D. J.; ***Dattwyler, R. J.*** ; Andriole, V.T. [EDITOR]
CS Department of Medicine and Neurology, State University of New York at Stony Brook, Stony Brook, NY 11794-8153, USA.
SO Reviews of Infectious Diseases, (1989) Vol. 11, No. Supplement 6, pp. S1518-S1525. 56 ref.
Meeting Info.: Lyme disease and other spirochetal diseases, Washington, D.C., 29 February-1 March 1988.
DT Journal
LA English
AB Lyme ***borreliosis*** has become the most common tick-borne infection in the USA. Although both beta -lactam and tetracycline antibiotics have been shown to be effective in the treatment of this spirochaetosis, the development of optimal therapeutic modalities has been hampered by the lack of reliable microbiologic or immunologic criteria for the diagnosis or cure of this infection. In vitro sensitivity studies have been performed by several laboratories, but there has been no standardization of the methodology for measuring either inhibitory or bactericidal levels. Clinical studies have documented the efficacy of antibiotics, but therapy has failed in as many as 50% of cases of chronic infection. Although new antibiotic regimens appear promising, the optimal treatment of this infectious disease remains to be determined. In this report the clinical and experimental rationale for the antibiotic regimens that are currently used and the need for more standardized approach to treatment trials are reviewed.

L2 ANSWER 74 OF 102 CABA COPYRIGHT 2002 CABI

AN 93:129406 CABA
DN 930518195
TI Immunologic aspects of Lyme ***borreliosis***
AU ***Dattwyler, R. J.*** ; Volkman, D. J.; Luft, B. J.; Andriole, V.T. [EDITOR]
CS Department of Medicine, State University of New York School of Medicine at Stony Brook, Stony Brook, NY 11724-8161, USA.
SO Reviews of Infectious Diseases, (1989) Vol. 11, No. Supplement 6, pp. S1494-S1498. 41 ref.
Meeting Info.: Lyme disease and other spirochetal diseases, Washington, D.C., 29 February-1 March 1988.
DT Journal
LA English
AB Immune responses to ***Borrelia*** burgdorferi infection are now well characterized. Following infection there is an early T cell response and a more slowly evolving B cell response. IgM antibodies appear first and are followed by IgG and IgA. Early antibodies are primarily against a 41-kDa flagellum-associated antigen; responses to other spirochaetal antigens develop later. Serologic assays that use whole B. burgdorferi preparations are not always able to detect an early rise in antibodies above the background of cross-reactive antibodies present in most uninfected individuals. Moreover, some individuals with neurologic involvement who lack diagnostic levels of serum antibody to B. burgdorferi have high levels of the antibody in their cerebrospinal fluid. Specific T cell blastogenesis to B. burgdorferi can further document infection. Analysis of T cell subsets in Lyme arthritis demonstrates a marked decrease in the CD4+2H4+ subpopulation in the synovial fluid, although normal numbers of these cells are present in peripheral blood. Immunologic measurements are useful in evaluating and treating a wide array of patients who may be infected with B. burgdorferi.

L2 ANSWER 75 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 46
AN 1989:126037 BIOSIS
DN BA87:60690
TI SERONEGATIVE LYME DISEASE DISSOCIATION OF SPECIFIC T AND B-LYMPHOCYTE RESPONSES TO ***BORRELIA*** -BURGDORFERI.
AU ***DATTWYLER R J*** ; VOLKMAN D J; LUFT B J; HALPERIN J J; THOMAS J; GOLIGHTLY M G
CS DIV. CLIN. IMMUNOL., HEALTH SCI. CENT., SUNY STONY BROOK, STONY BROOK, N.Y. 11794-8161.
SO N ENGL J MED, (1988) 319 (22), 1441-1446.
CODEN: NEJMAG. ISSN: 0028-4793.
FS BA; OLD
LA English
AB The diagnosis of Lyme disease often depends on the measurement of serum antibodies to ***Borrelia*** burgdorferi, the spirochete that causes this disorder. Although prompt treatment with antibiotics may abrogate the antibody response to the infection, symptoms persist in some patients. We studied 17 patients who had presented with acute Lyme disease and received prompt treatment with oral antibiotics, but in whom chronic Lyme disease subsequently developed. Although these patients had clinically active disease, none had diagnostic levels of antibodies to B. burgdorferi on either a standard enzyme-linked immunosorbent assay or immunofluorescence assay. On Western blot analysis, the level of immunoglobulin reactivity

against B. burgdorferi in serum from these patients was no greater than that in serum from normal controls. The patients had a vigorous T-cell proliferative response to whole B. burgdorferi, with a mean (.+-. SEM) stimulation index of 17.8 .+-. 3.3, similar to that (15.8 .+-. 3.2) in 18 patients with chronic Lyme disease who had detectable antibodies. The T-cell respose of both groups was greater than that of a control group of healthy subjects (3.1 .+-. 0.5; $P < 0.001$). We conclude that the presence of chronic Lyme disease cannot be excluded by the absence of antibodies against B. burgdorferi and that a specific T-cell blastogenic response to B. burgdorferi is evidence of infection in seronegative patients with clinical indications of chronic Lyme disease.

L2 ANSWER 76 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 47
AN 1988:372478 BIOSIS
DN BA86:56388
TI TREATMENT OF LATE LYME ***BORRELIOSIS*** RANDOMIZED COMPARISON OF CEFTRIAXONE AND PENICILLIN.
AU ***DATTWYLER R J*** ; HALPERIN J J; VOLKMAN D J; LUFT B J
CS DIV. CLINICAL IMMUNOL., HSC T16-040, SUNY, STONY BROOK, N.Y. 11794-8161, USA.
SO LANCET, (1988) 1 (8596), 1191-1194.
CODEN: LANCAO. ISSN: 0023-7507.
FS BA; OLD
LA English
AB 23 patients with clinically active late Lyme disease were randomly assigned to intravenous treatment with either penicillin or ceftriaxone. Of the 10 treated with penicillin, 5 were judged treatment failures; of the 13 who received ceftriaxone, only 1 did not respond. An additional 31 patients were subsequently treated with ceftriaxone 4 g/day (n = 17) or 2 g/day (n = 14); success rates in both groups were comparable to those in the cohort randomised to ceftriaxone. Patients unresponsive to ceftriaxone were more likely to have received corticosteroid treatment.

L2 ANSWER 77 OF 102 SCISEARCH COPYRIGHT 2002 ISI (R)
AN 88:500648 SCISEARCH
GA The Genuine Article (R) Number: P9286
TI CARPAL-TUNNEL SYNDROME IN LATE LYME ***BORRELIOSIS***
AU HALPERIN J J (Reprint); ***DATTWYLER R J***
CS SUNY STONY BROOK, STONY BROOK, NY, 11794
CYA USA
SO MUSCLE & NERVE, (1988) Vol. 11, No. 9, pp. 975.
DT Conference; Journal
FS LIFE
LA ENGLISH
REC No References

L2 ANSWER 78 OF 102 SCISEARCH COPYRIGHT 2002 ISI (R)
AN 88:662984 SCISEARCH
GA The Genuine Article (R) Number: R0556
TI IMMUNODOMINANT ANTIGENS OF ***BORRELIA*** BURGDORFER - ANALYSIS BY 2-DE AND DIRECT AMINO-ACID SEQUENCING
AU GOREVIC P D (Reprint); JIANG W; MUNOZ P C; ***DATTWYLER R J*** ; LUFT B J
CS SUNY STONY BROOK, STONY BROOK, NY, 11794

CYA USA
SO ELECTROPHORESIS, (1988) Vol. 9, No. 10, pp. 628.
DT Conference; Journal
FS LIFE
LA ENGLISH
REC No References

L2 ANSWER 79 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 48
AN 1989:85499 BIOSIS
DN BR36:41590
TI IMMUNOREGULATORY ABNORMALITIES IN ***BORRELIA*** -BURGDORFERI INFECTION.
AU THOMAS J A; LIPSCHITZ R; GOLIGHTLY M G; ***DATTWYLER R J***
CS DEP. PATHOL., UNIV. HOSP., SUNY STONY BROOK, STONY BROOK, N.Y. 11794.
SO BENACH, J. L. AND E. M. BOSLER (ED.). ANNALS OF THE NEW YORK ACADEMY OF SCIENCES, VOL. 539. LYME DISEASE AND RELATED DISORDERS; INTERNATIONAL CONFERENCE, NEW YORK, NEW YORK, USA, SEPTEMBER 14-16, 1987. XIV+513P. NEW YORK ACADEMY OF SCIENCES: NEW YORK, NEW YORK, USA. ILLUS. MAPS. PAPER. (1988) 0 (0), 431-433.
CODEN: ANYAA9. ISSN: 0077-8923. ISBN: 0-89766-475-2 (PAPER), 0-89766-474-4 (CLOTH).
FS BR; OLD
LA English

L2 ANSWER 80 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 49
AN 1989:85487 BIOSIS
DN BR36:41578
TI SPECIFICITY OF HUMAN B-CELL RESPONSES OF IMMUNODOMINANT ANTIGENS OF ***BORRELIA*** -BURGDORFERI.
AU LUFT B J; ***DATTWYLER R J*** ; HALPERIN J J; FALLDORF P; VOLKMAN D J
CS DEP. MED., HEALTH SCI. CENT., SUNY STONY BROOK, STONY BROOK, N.Y. 11794.
SO BENACH, J. L. AND E. M. BOSLER (ED.). ANNALS OF THE NEW YORK ACADEMY OF SCIENCES, VOL. 539. LYME DISEASE AND RELATED DISORDERS; INTERNATIONAL CONFERENCE, NEW YORK, NEW YORK, USA, SEPTEMBER 14-16, 1987. XIV+513P. NEW YORK ACADEMY OF SCIENCES: NEW YORK, NEW YORK, USA. ILLUS. MAPS. PAPER. (1988) 0 (0), 398-399.
CODEN: ANYAA9. ISSN: 0077-8923. ISBN: 0-89766-475-2 (PAPER), 0-89766-474-4 (CLOTH).
FS BR; OLD
LA English

L2 ANSWER 81 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 50
AN 1989:85473 BIOSIS
DN BR36:41564
TI NEW CHEMOTHERAPEUTIC APPROACHES IN THE TREATMENT OF LYME ***BORRELIOSIS*** .
AU LUFT B J; VOLKMAN D J; HALPERIN J J; ***DATTWYLER R J***
CS DEP. MED., HEALTH SCI. CENT., SUNY STONY BROOK, STONY BROOK, N.Y. 11794.
SO BENACH, J. L. AND E. M. BOSLER (ED.). ANNALS OF THE NEW YORK ACADEMY OF SCIENCES, VOL. 539. LYME DISEASE AND RELATED DISORDERS; INTERNATIONAL CONFERENCE, NEW YORK, NEW YORK, USA, SEPTEMBER 14-16, 1987. XIV+513P. NEW YORK ACADEMY OF SCIENCES: NEW YORK, NEW YORK, USA. ILLUS. MAPS. PAPER.

(1988) 0 (0), 352-361.
CODEN: ANYAA9. ISSN: 0077-8923. ISBN: 0-89766-475-2 (PAPER), 0-89766-474-4 (CLOTH).
FS BR; OLD
LA English

L2 ANSWER 82 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1988:257133 BIOSIS
DN BR34:128163
TI CENTRAL NERVOUS SYSTEM INVOLVEMENT IN CHRONIC LYME ***BORRELIOSIS*** .
AU HALPERIN J J; ANAND A; ***DATTWYLER R J***
CS STONY BROOK, N.Y.
SO 40TH ANNUAL MEETING OF THE AMERICAN ACADEMY OF NEUROLOGY, CINCINNATI, OHIO, USA, APRIL 17-23, 1988. NEUROLOGY. (1988) 38 (3 SUPPL 1), 114.
CODEN: NEURAI. ISSN: 0028-3878.
DT Conference
FS BR; OLD
LA English

L2 ANSWER 83 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1988:369052 BIOSIS
DN BR35:53665
TI SEROLOGICAL AND CLINICAL EVIDENCE OF OCCULT LYME ***BORRELIOSIS*** AMONG EXPOSED WORKERS IN AN ENDEMIC AREA.
AU LIPSCHITZ R; GARDELLA J E; GOREVIC D; ***DATTWYLER R J***
CS SUNY STONY BROOK, NY 11794.
SO 52ND ANNUAL MEETING OF THE AMERICAN RHEUMATISM ASSOCIATION, HOUSTON, TEXAS, USA, MAY 23-28, 1988. ARTHRITIS RHEUM. (1988) 31 (4 SUPPL), S97.
CODEN: ARHEAW. ISSN: 0004-3591.
DT Conference
FS BR; OLD
LA English

L2 ANSWER 84 OF 102 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.DUPLICATE 51
AN 88252989 EMBASE
DN 1988252989
TI Specific immune responses in Lyme ***borreliosis*** . Characterization of T cell and B cell responses to Botrelia burgdorferi.
AU ***Dattwyler R.J.*** ; Volkman D.J.; Halperin J.J.; Luft B.J.; Thomas J.; Golightly M.G.
CS State University of New York, School of Medicine, Stony Brook, NY 11794, United States
SO Annals of the New York Academy of Sciences, (1988) 539/- (93-102).
ISSN: 0077-8923 CODEN: ANYAA
CY United States
DT Journal
FS 004 Microbiology
026 Immunology, Serology and Transplantation
LA English
SL English
AB In this study we further delineate human T and B cell responses in Lyme ***borreliosis*** and present a model that addresses interactions of T cells and B cells in developing anti-B. burgdorferi reactivity.

L2 ANSWER 85 OF 102 SCISEARCH COPYRIGHT 2002 ISI (R)

AN 88:635613 SCISEARCH
GA The Genuine Article (R) Number: Q8973
TI SPECIFIC IMMUNE-RESPONSES IN LYME ***BORRELIOSIS*** - CHARACTERIZATION OF T-CELL AND B-CELL RESPONSES TO ***BORRELIA*** -BURGDORFERI
AU ***DATTWYLER R J (Reprint)*** ; VOLKMAN D J; HALPERIN J J; LUFT B J; THOMAS J; GOLIGHTLY M G
CS SUNY STONY BROOK, SCH MED, STONY BROOK, NY, 11794 (Reprint)
CYA USA
SO ANNALS OF THE NEW YORK ACADEMY OF SCIENCES, (1988) Vol. 539, No. AUG, pp. 93-102.
DT Article; Journal
LA ENGLISH
REC Reference Count: 31

L2 ANSWER 86 OF 102 LIFESCI COPYRIGHT 2002 CSA
AN 88:110164 LIFESCI
TI New chemotherapeutic approaches in the treatment of Lyme ***borreliosis*** .
LYME DISEASE AND RELATED DISORDERS.
AU Luft, B.J.; Volkman, D.J.; Halperin, J.J.; ***Dattwyler, R.J.*** ; Benach, J.L. [editor]; Bosler, E.M. [editor]
CS Dep. Med., Health Sci. Cent., SUNY, Stony Brook, NY 11794, USA
SO ANN. N.Y. ACAD. SCI., (1988) pp. 352-361.
Meeting Info.: International Conference on Lyme Disease and Related Disorders. New York, NY (USA). 14-16 Sep 1987.
DT Book
FS J; A
LA English
SL English
AB While B. burgdorferi may be sensitive to relatively small concentrations of penicillin and ceftriaxone, the organism is killed slowly. This implies that, as in syphilis, prolonged blood levels of these drugs may be necessary in order to ensure cure. Increasing the concentrations of penicillin or ceftriaxone above the MIC for the organism has little effect on the rate of killing. In contrast, the killing by tetracycline can be augmented by increasing concentrations of the drug. Ceftriaxone is more active than penicillin, as measured by MIC, against the five strains of B. burgdorferi tested. Ceftriaxone was efficacious in the treatment of Lyme ***borreliosis*** , which was recalcitrant to penicillin therapy. In a randomized trial comparing ceftriaxone to high-dose penicillin therapy, ceftriaxone was significantly more efficacious than penicillin in the treatment of the late complications of Lyme ***borreliosis*** .

L2 ANSWER 87 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 52
AN 1989:85440 BIOSIS
DN BR36:41531
TI NERVOUS SYSTEM ABNORMALITIES IN LYME DISEASE.
AU HALPERIN J J; PASS H L; ANAND A K; LUFT B J; VOLKMAN D J; ***DATTWYLER R*** *** J***
CS DEP. NEUROL., STATE UNIV. N.Y., STONY BROOK, N.Y. 11794.
SO BENACH, J. L. AND E. M. BOSLER (ED.). ANNALS OF THE NEW YORK ACADEMY OF SCIENCES, VOL. 539. LYME DISEASE AND RELATED DISORDERS; INTERNATIONAL CONFERENCE, NEW YORK, NEW YORK, USA, SEPTEMBER 14-16, 1987. XIV+513P. NEW YORK ACADEMY OF SCIENCES: NEW YORK, NEW YORK, USA. ILLUS. MAPS. PAPER.

(1988) 0 (0), 24-34.
CODEN: ANYAA9. ISSN: 0077-8923. ISBN: 0-89766-475-2 (PAPER), 0-89766-474-4 (CLOTH).
FS BR; OLD
LA English

L2 ANSWER 88 OF 102 LIFESCI COPYRIGHT 2002 CSA
AN 88:110176 LIFESCI
TI Nervous system abnormalities in Lyme disease.
LYME DISEASE AND RELATED DISORDERS.
AU Halperin, J.J.; Pass, H.L.; Anand, A.K.; Luft, B.J.; Volkman, D.J.; ***Dattwyler, R.J.*** ; Benach, J.L. [editor]; Bosler, E.M. [editor]
CS Dep. Neurol., SUNY, Stony Brook, NY 11794, USA
SO ANN. N.Y. ACAD. SCI., (1988) pp. 24-34.
Meeting Info.: International Conference on Lyme Disease and Related Disorders. New York, NY (USA). 14-16 Sep 1987.
DT Book
FS J
LA English
AB ***Borrelia*** burgdorferi , the tick-borne spirochete that causes Lyme disease, has only recently been identified and characterized. However, long before its etiologic role was defined, a number of the clinical syndromes it causes were well-known. In evaluating patients with chronic Lyme ***borreliosis*** it rapidly became apparent to us that although the typical clinical triad occurred in some, far more patients had a variety of less dramatic symptoms, which despite their more subtle nature were quite disabling. Most patients with this chronic infection developed marked fatigue. Many developed difficulties with memory and intellectual function. Others developed intermittent limb paresthesias. In view of this broad range of symptoms, often with rather minimal findings on clinical examination, we began a series of detailed, systematic studies in an effort to identify and quantify the abnormalities underlying these patients' difficulties.

L2 ANSWER 89 OF 102 LIFESCI COPYRIGHT 2002 CSA
AN 88:110160 LIFESCI
TI Specific immune responses in Lyme ***borreliosis*** : Characterization of T cell and B cell responses to ***Borrelia*** burgdorferi .
LYME DISEASE AND RELATED DISORDERS.
AU ***Dattwyler, R.J.*** ; Volkman, D.J.; Halperin, J.J.; Luft, B.J.; Thomas, J.; Golightly, M.G.; Benach, J.L. [editor]; Bosler, E.M. [editor]
CS State Univ. New York, Sch. Med., Stony Brook, NY 11794, USA
SO ANN. N.Y. ACAD. SCI., (1988) pp. 93-94.
Meeting Info.: International Conference on Lyme Disease and Related Disorders. New York, NY (USA). 14-16 Sep 1987.
DT Book
TC Conference
FS J; F
LA English

L2 ANSWER 90 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1988:211471 BIOSIS
DN BR34:104481
TI CELLULAR IMMUNE RESPONSE IN LYME DISEASE THE RESPONSE TO MITOGENS LIVE ***BORRELIA*** -BURGDORFERI NK CELL FUNCTION AND LYMPHOCYTE SUBSETS.

AU ***DATTWYLER R J*** ; THOMAS J A; BENACH J L; GOLIGHTLY M G
CS SUNY AT STONY BROOK DIV. CLINICAL IMMUNOLOGY HEALTH SCI. CENTER, STONY BROOK, N.Y. 11794-8161.
SO STANEK, G., ET AL. (ED.). LYME BORRELIOSIS; PROCEEDINGS OF THE SECOND INTERNATIONAL SYMPOSIUM ON LYME DISEASE AND RELATED DISORDERS, VIENNA, AUSTRIA, 1985. XIII+501P. VCH PUBLISHERS, INC.: NEW YORK, NEW YORK, USA; GUSTAV FISCHER VERLAG: STUTTGART, WEST GERMANY. ILLUS. (1987) 0 (0), 151-159.
ISBN: 0-89574-230-6, 3-437-11061-6.
FS BR; OLD
LA English

L2 ANSWER 91 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 53
AN 1988:72192 BIOSIS
DN BA85:38491
TI LYME DISEASE CAUSE OF A TREATABLE PERIPHERAL NEUROPATHY.
AU HALPERIN J J; LITTLE B W; COYLE P K; ***DATTWYLER R J***
CS DEP. NEUROL., HSC T12-020, SUNY, STONY BROOK, N.Y. 11794.
SO NEUROLOGY, (1987) 37 (11), 1700-1706.
CODEN: NEURAI. ISSN: 0028-3878.
FS BA; OLD
LA English
AB Peripheral nerve dysfunction was demonstrated in 36% of patients with late Lyme disease. Of 36 patients evaluated, 14 had prominent limb paresthesias. Thirteen of these had neurophysiologic evidence of peripheral neuropathy; neurologic examinations were normal in most. Repeat testing following treatment documented rapid improvement in 11 of 12. We conclude that this neuropathy, which is quite different from the infrequent peripheral nerve syndromes previously described in this illness, is commonly present in late Lyme disease. This neuropathy presents with intermittent paresthesias without significant deficits on clinical examination and is reversible with appropriate antibiotic tratment. Neurophsyiologic testing provides a useful diagnostic tool and an important measure of response to treatment.

L2 ANSWER 92 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 54
AN 1987:323697 BIOSIS
DN BR33:34294
TI CEFTRIAXONE AS EFFECTIVE THERAPY IN REFRACTORY LYME DISEASE.
AU ***DATTWYLER R J*** ; HALPERIN J J; PASS H; LUFT B J
CS DIV. ALLERGY IMMMUNOL. RHEUMATOL., HEALTH SCI. CENT. T16, SUNY STONY BROOK, N.Y. 11794.
SO J. Infect. Dis., (1987) 155 (6), 1322-1325.
CODEN: JIDIAQ. ISSN: 0022-1899.
FS BR; OLD
LA English

L2 ANSWER 93 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 55
AN 1987:418143 BIOSIS
DN BA84:84805
TI LYME MENINGOENCEPHALITIS REPORT OF A SEVERE PENICILLIN-RESISTANT CASE.
AU DIRINGER M N; HALPERIN J J; ***DATTWYLER R J***

CS DEP. NEUROLOGY, HSC T12-020, SUNY, STONY BROOK, N.Y. 11794.
SO ARTHRITIS RHEUM, (1987) 30 (6), 705-708.
CODEN: ARHEAW. ISSN: 0004-3591.
FS BA; OLD
LA English
AB Although Lyme disease frequently attacks the central nervous system, this involvement is rarely severe, and high-dose intravenous penicillin usually is adequate treatment. The patient we describe developed severe Lyme meningoencephalitis despite receiving a full course of penicillin, and his condition continued to deteriorate after reinstitution of this treatment. Intravenous chloramphenicol was used successfully and resulted in a substantial improvement.

L2 ANSWER 94 OF 102 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
AN 87106418 EMBASE
DN 1987106418
TI Lyme disease in Europe and North America.
AU ***Dattwyler R.J.*** ; Volkman D.J.; Luft B.J.; Halperin J.J.
CS Division of Allergy, Rheumatology and Clinical Immunology, State University of New York at Stony Brook, Stony Brook, NY 11794, United States
SO Lancet, (1987) 1/8534 (681).
CODEN: LANCAO
CY United Kingdom
DT Journal
FS 004 Microbiology
008 Neurology and Neurosurgery
LA English

L2 ANSWER 95 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1987:264975 BIOSIS
DN BR33:6871
TI DEMONSTRATION OF SPIROCHETE-INDUCED IGM ANTI- ***BORRELIA*** ANTIBODY PRODUCTION IN-VITRO BY HUMAN B CELLS AFTER LYME ***BORRELIOSIS*** .
AU VOLKMAN D J; ***DATTWYLER R J*** ; COLIGHTLY M G
CS STATE UNIV. NEW YORK, HEALTH SCI. CENT., STONY BROOK, N.Y. 11794.
SO 71ST ANNUAL MEETING OF THE FEDERATION OF AMERICAN SOCIETIES FOR EXPERIMENTAL BIOLOGY, WASHINGTON, D.C., USA, MARCH 29-APRIL 2, 1987. FED PROC. (1987) 46 (3), 628.
CODEN: FEPRA7. ISSN: 0014-9446.
DT Conference
FS BR; OLD
LA English

L2 ANSWER 96 OF 102 SCISEARCH COPYRIGHT 2002 ISI (R)
AN 87:133990 SCISEARCH
GA The Genuine Article (R) Number: G3234
TI DEMONSTRATION OF SPIROCHETE-INDUCED IGM ANTI- ***BORRELIA*** ANTIBODY-PRODUCTION INVITRO BY HUMAN B-CELLS AFTER LYME ***BORRELIOSIS***
AU VOLKMAN D J (Reprint); ***DATTWYLER R J*** ; GOLIGHTLY M G
CS SUNY STONY BROOK, HLTH SCI CTR, STONY BROOK, NY, 11794
CYA USA
SO FEDERATION PROCEEDINGS, (1987) Vol. 46, No. 3, pp. 628.
DT Conference; Journal

FS LIFE
LA ENGLISH
REC No References

L2 ANSWER 97 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 56
AN 1987:313468 BIOSIS
DN BA84:32975
TI FAILURE OF TETRACYCLINE THERAPY IN EARLY LYME DISEASE.
AU ***DATTWYLER R J*** ; HALPERIN J J
CS DEP. MED., HEALTH SCI. CENT., SUNY, STONY BROOK, N.Y. 11794.
SO ARTHRITIS RHEUM, (1987) 30 (4), 448-450.
CODEN: ARHEAW. ISSN: 0004-3591.
FS BA; OLD
LA English
AB We describe the clinical courses of 5 patients with Lyme disese who developed significant late complications, despite receiving tetracycline early in the course of their illness. All 5 patients had been treated for erythema chronicum migrans with a course of tetracycline that met or exceeded current recommendations. The late manifestations of Lyme disease included arthritis, cranial nerve palsy, peripheral neuropathy, chronic fatigue, and changes in mental function. Our findings suggest that the use of tetracycline at a dosage of 250 mg, 4 times a day for 10 days, as a treatment for early Lyme disease should be reconsidered. To determine optimal therapy for early Lyme disease, a study that compares an increased dosage of tetracycline with alternative treatments is indicated.

L2 ANSWER 98 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1988:147964 BIOSIS
DN BR34:73041
TI IN-VIVO AND IN-VITRO INHIBITION OF NATURAL KILLER CELL ACTIVITY BY ***BORRELIA*** -BURGDORFERI.
AU GOLIGHTLY M G; THOMAS J A; VOLKMAN D J; ***DATTWYLER R J***
CS DP. PATHOL., STATE UNIV. NEW YORK AT STONY BROOK, STONY BROOK, N.Y. 11794.
SO 11TH INTERNATIONAL RES CONGRESS AND 24TH NATIONAL MEETING OF THE RETICULOENDOTHELIAL SOCIETY, KAUAI, HAWAII, USA, OCTOBER 17-21, 1987. J LEUKOCYTE BIOL. (1987) 42 (4), 381.
CODEN: JLBIE7. ISSN: 0741-5400.
DT Conference
FS BR; OLD
LA English

L2 ANSWER 99 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1987:269968 BIOSIS
DN BR33:11864
TI REVERSIBILITY OF LYME NEUROPATHY WITH ANTIBIOTIC TREATMENT.
AU HALPERIN J J; ***DATTWYLER R J***
CS STONY BROOK, N.Y.
SO 39TH ANNUAL MEETING OF THE AMERICAN ACADEMY OF NEUROLOGY, NEW YORK, NEW YORK, USA, APRIL 5-11, 1987. NEUROLOGY. (1987) 37 (3 SUPPL 1), 362.
CODEN: NEURAI. ISSN: 0028-3878.
DT Conference
FS BR; OLD
LA English

L2 ANSWER 100 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1987:354243 BIOSIS
DN BR33:54864
TI SERONEGATIVE LYME ***BORRELIOSIS*** AFTER EARLY ANTIBIOTIC TREATMENT.
AU ***DATTWYLER R J*** ; VOLKMAN D J; GOLIGHTLY M G; FALLDORF P A; THOMAS J
CS SUNY HEALTH SCI. CENTER, STONY BROOK, NY 11794.
SO 51ST ANNUAL MEETING OF THE AMERICAN RHEUMATISM ASSOCIATION, WASHINGTON, D.C., USA, JUNE 9-13, 1987. ARTHRITIS RHEUM. (1987) 30 (4 SUPPL), S36.
CODEN: ARHEAW. ISSN: 0004-3591.
DT Conference
FS BR; OLD
LA English

L2 ANSWER 101 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1986:350292 BIOSIS
DN BR31:55220
TI LYME DISEASE SPIROCHETE INDUCED IMMUNOSUPPRESSION.
AU THOMAS J A; BENACH J L; GOLIGHTLY M G; ***DATTWYLER R J***
CS DEP. MED., SUNY, STONY BROOK, N.Y.
SO FORTY-THIRD ANNUAL NATIONAL MEETING OF THE AMERICAN FEDERATION FOR CLINICAL RESEARCH, WASHINGTON, D.C., USA, MAY 2-5, 1986. CLIN RES. (1986) 34 (2), 534A.
CODEN: CLREAS. ISSN: 0009-9279.
DT Conference
FS BR; OLD
LA English

L2 ANSWER 102 OF 102 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
DUPLICATE 57
AN 1987:287037 BIOSIS
DN BR33:18514
TI CELLULAR IMMUNE RESPONSE IN LYME DISEASE THE RESPONSE TO MITOGENS LIVE ***BORRELIA*** -BURGDORFERI NK CELL FUNCTION AND LYMPHOCYTE SUBSETS.
AU ***DATTWYLER R J*** ; THOMAS J A; BENACH J L; GOLIGHTLY M G
CS SUNY, DIV. CLIN. IMMUNOL., HEALTH SCI. CENT., STONY BROOK, N.Y. 11794-8161, USA.
SO SECOND INTERNATIONAL SYMPOSIUM ON LYME DISEASE (LYME BORRELIOSIS) AND RELATED DISORDERS, VIENNA, AUSTRIA, 1985. ZENTRALBL BAKTERIOL MIKROBIOL HYG SER A. (1986 (RECD 1987)) 263 (1-2), 151-159.
CODEN: ZBMPEJ. ISSN: 0176-6724.
FS BR; OLD
LA English

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E1 1 SEINONYAN B N/AU
E2 76 SEINOST G/AU
E3 11 --> SEINOST GERALD/AU
E4 1 SEINOSUKE UEDA/AU
E5 3 SEINOU TOSHIO/AU
E6 2 SEINOUMEDA A/AU
E7 5 SEINOV N P/AU
E8 1 SEINOV NIKOLAJ P/AU
E9 3 SEINOV S V/AU

E10 2 SEINOV V/AU
E11 1 SEINOV Y S/AU
E12 1 SEINOVA D/AU

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L3 45 ("SEINOST G"/AU OR "SEINOST GERALD"/AU) AND BORRELI?

=> dup rem l3
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L4 15 DUP REM L3 (30 DUPLICATES REMOVED)

=> d bib ab 1-
YOU HAVE REQUESTED DATA FROM 15 ANSWERS - CONTINUE? Y/(N):y

L4 ANSWER 1 OF 15 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 1
AN 2001:212011 BIOSIS
DN PREV200100212011
TI Distinct levels of genetic diversity of ***Borrelia*** burgdorferi are associated with different aspects of pathogenicity.
AU Baranton, Guy (1); ***Seinost, Gerald*** ; Theodore, George; Postic, Daniele; Dykhuizen, Daniel
CS (1) Unite de bacteriologie moleculaire et medicale, Institut Pasteur, 28, rue du Dr Roux, 75724, Paris cedex, 15: gbaran@pasteur.fr France
SO Research in Microbiology, (March, 2001) Vol. 152, No. 2, pp. 149-156. print.
ISSN: 0923-2508.
DT Article
LA English
SL English
AB Different species of pathogenic ***Borrelia*** show different symptoms and tick vector specificity. Even within regions where only one species is found, Lyme disease progresses very differently from one patient to another. Since ***Borrelia*** shows very little recombination either within or between species, alleles of a gene can be used to mark clones. The ospC gene is highly variable within each species and can be used to define groups of related clones. It has been previously shown that only four out of seventeen ospC groups of ***Borrelia*** burgdorferi sensu stricto cause invasive forms of the disease. Other groups cause erythema migrans, a skin rash at the site of the tick bite, but not invasive disease, while still other groups seem to be nonpathogenic to humans. In this study we extend the analysis of the ospC gene to the other pathogenic species, ***Borrelia*** garinii and ***Borrelia*** afzelii. Only two groups in B. afzelii and four groups in B. garinii cause invasive disease. Thus, only ten out of the 58 defined ospC groups cause invasive and presumably chronic Lyme disease.

L4 ANSWER 2 OF 15 CAPLUS COPYRIGHT 2002 ACS
AN 2000:911434 CAPLUS
DN 134:67201
TI ***Borrelia*** burgdorferi and B. afzelii gene ospC fusion proteins, their sequences, and use as immunogenic compositions for immunizing animals against Lyme disease
IN Dattwyler, Raymond J.; ***Seinost, Gerald*** ; Dykhuizen, Daniel; Luft,

Benjamin J.; Gomes-solecki, Maria
PA Research Foundation of State University of New York, USA; Brook Biotechnologies, Inc.
SO PCT Int. Appl., 160 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000078966	A1	20001228	WO 2000-US16915	20000619

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI US 1999-140042P P 19990618
AB The invention provides numerous gene ospC proteins, or immunogenic fragment thereof, from Lyme disease causing ***Borrelia*** , such as B. burgdorferi (families A, B, I and K) or B. afzelii (families A and B). The invention also provides numerous chimeric proteins contg. at least two of the said OspC proteins from B. burgdorferi (families A, B, I and K) or B. afzelii (families A and B). The invention further provides nucleic acid mols. encoding said chimeric OspC proteins. Still further, the invention provides the for the use of said OspC fusion proteins as immunogenic compns., which can act as vaccines to immunize animals against Lyme disease. Finally, the invention provides: (1) a method for detecting an immune response to Lyme disease which utilizes the chimeric OspC proteins and (2) the nucleic acid sequences, as well as the amino acid sequences, of the ***Borrelia*** chimeric OspC proteins. The invention relates that: (1) B. burgdorferi family A strains contain gene ospC allele OC1; (2) B. burgdorferi family B strains contain gene ospC alleles OC2 and OC3; (3) B. burgdorferi family I strains contain gene ospC allele OC10 and (4) B. burgdorferi family K strains contain gene ospC alleles OC12 and OC13. In the example section, the invention showed the results of immunizing mice with the various OspC chimeric proteins.
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 15 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 2
AN 1999:359404 BIOSIS
DN PREV199900359404
TI Four clones of ***Borrelia*** burgdorferi sensu stricto cause invasive infection in humans.
AU ***Seinost, Gerald*** ; Dykhuizen, Daniel E.; Dattwyler, Raymond J. (1); Golde, William T.; Dunn, John J.; Wang, Ing-Nang; Wormser, Gary P.; Schriefer, Martin E.; Luft, Benjamin J.
CS (1) Division of Clinical Immunology/Allergy, Department of Medicine, Health Sciences Center, State University of New York at Stony Brook, Stony Brook, NY, 11794-8161 USA

SO Infection and Immunity, (July, 1999) Vol. 67, No. 7, pp. 3518-3524.
ISSN: 0019-9567.
DT Article
LA English
SL English
AB Lyme disease begins at the site of a tick bite, producing a primary infection with spread of the organism to secondary sites occurring early in the course of infection. A major outer surface protein expressed by the spirochete early in infection is outer surface protein C (OspC). In ***Borrelia*** burgdorferi sensu stricto, OspC is highly variable. Based on sequence divergence, alleles of ospC can be divided into 21 major groups. To assess whether strain differences defined by ospC group are linked to invasiveness and pathogenicity, we compared the frequency distributions of major ospC groups from ticks, from the primary erythema migrans skin lesion, and from secondary sites, principally from blood and spinal fluid. The frequency distribution of ospC groups from ticks is significantly different from that from primary sites, which in turn is significantly different from that from secondary sites. The major groups A, B, I, and K had higher frequencies in the primary sites than in ticks and were the only groups found in secondary sites. We define three categories of major ospC groups: one that is common in ticks but very rarely if ever causes human disease, a second that causes only local infection at the tick bite site, and a third that causes systemic disease. The finding that all systemic B. burgdorferi sensu stricto infections are associated with four ospC groups has importance in the diagnosis, treatment, and prevention of Lyme disease.

L4 ANSWER 4 OF 15 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 3
AN 2000:16811 BIOSIS
DN PREV200000016811
TI Infection with multiple strains of ***Borrelia*** burgdorferi sensu stricto in patients with Lyme disease.
AU ***Seinost, Gerald*** ; Golde, William T.; Berger, Bernard W.; Dunn, John J.; Qiu, Dan; Dunkin, David S.; Dykhuizen, Daniel E.; Luft, Benjamin J.; Dattwyler, Raymond J. (1)
CS (1) Division of Allergy/Clinical Immunology, HSC 16T-040, Department of Medicine, State University of New York at Stony Brook, Stony Brook, NY, 11794-8161 USA
SO Archives of Dermatology, (Nov., 1999) Vol. 135, No. 11, pp. 1329-1333.
ISSN: 0003-987X.
DT Article
LA English
SL English
AB Objective: To assess human skin biopsy specimens from erythema migrans lesions for the presence of infection with multiple strains of the Lyme disease spirochete, ***Borrelia*** burgdorferi. Design: Skin biopsy specimens were obtained prospectively from patients with erythema migrans. To determine allelic differences and strain identification of B burgdorferi, the biopsy specimens were analyzed by cold single-strand conformation polymorphism of an amplified fragment of the outer surface protein C (ospC) gene. Further single-strand conformation polymorphism patterns of amplified ospC genes from culture isolates were compared with polymerase chain reaction products obtained directly from erythema migrans biopsy specimens. Setting: A private dermatology office and a university

medical center outpatient department. Patients: Sixteen patients presenting with erythema migrans. Results: Two of the 16 patients in this cohort were infected with 2 B burgdorferi sensu stricto strains, as evidence d by 2 ospC alleles in their skin biopsy results. Conclusion: This is the first documented description of the existence of more than a single strain of B burgdorferi sensu stricto in a human specimen.

L4 ANSWER 5 OF 15 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 4
AN 1998:393305 BIOSIS
DN PREV199800393305
TI Cardiovascular manifestations of Lyme disease and effects upon left ventricular dysfunction.
AU ***Seinost, G. (1)*** ; Gasser, R.; Reisinger, E.; Rigler, M. Y.; Fischer, L.; Keplinger, A.; Dattwyler, R. J.; Dunn, J. J.; Klein, W.
CS (1) State Univ. N.Y. Stony Brok, Dep. Med., Div. Clin. Immunol./Allergy, Stony Brook, NY 11794-8161 USA
SO Acta Medica Austriaca, (1998) Vol. 25, No. 2, pp. 44-50. ISSN: 0303-8173.
DT Article
LA German
SL German; English
AB ***Borrelia*** burgdorferi infection (BBI) is suggested to be associated with dilated cardiomyopathy (IDC). Stanek et al. were able to cultivate ***Borrelia*** burgdorferi (BB) from myocardial biopsy tissue of a patient with longstanding dilated cardiomyopathy. Here we present a study in which we examined the effect of standard antibiotic treatment on the left ventricular ejection fraction (LV-EF) in patients with dilated cardiomyopathy associated with BBI. In this study we assessed the serum (IgG, IgM ELISA; Western Blot) and the history of 46 IDC-patients with specific respect to BBI (mean LV-EF: 30.4 +- 1.3%; measured by cardiac catheterization and echocardiography - length-area-volume method). All 46 patients received standard treatment for dilated cardiomyopathy: ACE-inhibitors, digitalis and diuretics. 11 (24%) patients showed positive serology and a history of BBI; 9 of these also had a typical history of tick bite and erythema chronicum migrans (ECM) and/or other organ involvement, 2 had no recollection of tick bite or ECM, but showed other BB-associated disorders (neuropathy, oligoarthritis). These 11 patients with BBI received standard antibiotic treatment with intravenous ceftriaxone 2 g bid for 14 days. 6 (55%) recovered completely and showed a normal LV-EF after 6 months, 3 (27%) improved their LV-EF and 2 (18%) did not improve at all. This amounts to 9 (82%) recovery/improvement in the BB-group. The 35 patients who did not show positive serology or a history of BBI did not receive antibiotic treatment, In this group without BBI 12 (26%) showed recovery/improvement following the standard treatment of dilated cardiomyopathy (see above). Our results indicate that BBI could play a decisive role in the development of dilated cardiomyopathy, especially in a geographical region as Graz, where BB is endemic. While aware of the small number of BB-patients in this study, we nevertheless conclude that, in a remarkable number of patients with signs of BBI, dilated cardiomyopathy could be reversed and LV-EF improved upon standard antibiotic treatment.

L4 ANSWER 6 OF 15 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 5

AN 1996:485969 BIOSIS
DN PREV199699201225
TI Reversal of ***Borrelia*** burgdorferi associated dilated cardiomyopathy by antibiotic treatment.
AU Gasser, R. (1); Fruhwald, F.; Schumacher, M.; ***Seinost, G.*** ; Reisinger, E.; Eber, B.; Keplinger, A.; Horvath, R.; Sedaj, B.; Klein, W.; Pierer, K.
CS (1) Borreliosis Study Group, Div. Cardiol., Dep. Med., Auenbruggerplatz 15, A-8036 Graz Austria
SO Cardiovascular Drugs and Therapy, (1996) Vol. 10, No. 3, pp. 351-360. ISSN: 0920-3206.
DT Article
LA English
AB It is suggested that ***Borrelia*** burgdorferi infection could be associated with dilated cardiomyopathy (IDC). Stanek et al. were able to cultivate ***Borrelia*** burgdorferi from myocardial biopsy tissue of a patient with longstanding dilated cardiomyopathy. Here we present a study in which we examined the effect of standard antibiotic treatment on the left ventricular ejection fraction (LVEF) in patients with dilated cardiomyopathy associated with ***Borrelia*** burgdorferi infection. In this study we assessed the serum (IgG, IgM Elisa) and history of 46 IDC patients with specific regard to ***Borrelia*** burgdorferi infection (mean LVEF 30.4 +- 1.3%, measured by cardiac catheterization and echocardiography with the length-area-volume method). All 46 patients received standard treatment for dilated cardiomyopathy: ACE inhibitors, digitalis, and diuretics. Eleven (24%) patients showed positive serology and a history of ***Borrelia*** burgdorferi infection; nine of these also had a typical history of tick bite and erythema chronicum migrans (ECM) and/or other organ involvement, and two had no recollection of tick bite or ECM but showed other ***Borrelia*** burgdorferi-associated disorders (neuropathy, oligoarthritis). These 11 patients with ***Borrelia*** burgdorferi infection received standard antibiotic treatment with intravenous ceftriaxone 2 g bid for 14 days. Six (55%) recovered completely and showed a normal LVEF after 6 months, three (27%) improved their LVEF, and two (18%) did not improve at all. This amounts to nine (82%) patients with recovery/improvement in the ***Borrelia*** burgdorferi group. The 35 patients who did not show positive serology or a history of ***Borrelia*** burgdorferi infection did not receive antibiotic treatment. In this group without ***Borrelia*** burgdorferi infection 12 (26%), showed recovery/improvement following the standard treatment of dilated cardiomyopathy (see earlier). Our results indicate that ***Borrelia*** burgdorferi infection could play a decisive role in the development of dilated cardiomyopathy, especially in a geographical region such as Graz, where ***Borrelia*** burgdorferi is endemic. While we are aware of the small number of ***Borrelia*** burgdorferi patients in this study, we nevertheless conclude that in a remarkable number of patients with signs of ***Borrelia*** burgdorferi infection, dilated cardiomyopathy could be reversed and LVEF improved.

L4 ANSWER 7 OF 15 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.DUPLICATE 6
AN 96309495 EMBASE
DN 1996309495
TI [Treatment of ***borrelia*** -infection by macrolid-antibiotics].
MAKROLID-ANTIBIOTIKA IN DER BEHANDLUNG VON ***BORRELIA*** -INFEKTION.
AU Gasser R.; Eber B.; Klein W.; ***Seinost G.*** ; Grinschgl S.; Sedaj

B.; Keplinger A.; Bergloff J.; Wendelin I.; Reisinger E.
CS Arbeitsgemeinschaft, Borrelia-B.-A. Krankheitsbilder, L. Medizin. Universitatsklinik Graz, Auenbruggerplatz 15,A-8036 Graz, Osterreich, Germany
SO Medizinische Welt, (1996) 47/7 (285-289).
ISSN: 0025-8512 CODEN: MEWEAC
CY Germany
DT Journal; Article
FS 004 Microbiology
031 Arthritis and Rheumatism
037 Drug Literature Index
LA German
SL English; German
AB Lyme disease definitely constitutes a therapeutic challenge. There has been conflicting evidence as far as the successful use of macrolides in this context is concerned. Acithromycin, however, has been unanimously reported as successful in early stages of Lyme disease, whereas less convincing evidence has been presented for erythromycin and roxithromycin. The latter has received some attention when combined with co-trimoxazole as a strategy in late Lyme disease refractory to conventional therapy. In summary, macrolides are potent anti- ***Borrelia*** agents but certainly require further investigation.

L4 ANSWER 8 OF 15 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 7
AN 1996:514033 BIOSIS
DN PREV199699236389
TI Oral treatment of late Lyme ***borreliosis*** with a combination of roxithromycin and co-trimoxazole: A pilot Study on 18 patients.
AU Gasser, R. (1); Reisinger, E.; Sedaj, B.; Horvarth, R.; ***Seinost,*** *** G.*** ; Keplinger, A.; Wendelin, I.; Klein, W.
CS (1) Dep. Internal Med., Univ. Graz, Auenbruggerplatz 15, A-8036 Graz Germany
SO Acta Medica Austriaca, (1996) Vol. 23, No. 3, pp. 99-101.
ISSN: 0303-8173.
DT Article
LA English
SL English; German

L4 ANSWER 9 OF 15 MEDLINE
AN 95295455 MEDLINE
DN 95295455 PubMed ID: 7776796
TI Treatment of late Lyme ***borreliosis*** with cefoperazone and sulbactam.
AU Gasser R N; Reisinger E C; Eber B; Wendelin I; Pokan R; ***Seinost G*** ; Klein W
SO LANCET, (1995 Mar 4) 345 (8949) 586.
Journal code: L0S; 2985213R. ISSN: 0140-6736.
CY ENGLAND: United Kingdom
DT Letter
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 199507
ED Entered STN: 19950720
Last Updated on STN: 19950720

Entered Medline: 19950707

L4 ANSWER 10 OF 15 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
AN 95077191 EMBASE
DN 1995077191
TI Treatment of late Lyme ***borreliosis*** with cefoperazone and sulbactam [13].
AU Gasser R.N.A.; Reisinger E.C.; Eber B.; Wendelin I.; Pokan R.; ***Seinost G.*** ; Klein W.
CS Borreliosis Study Group, Division of Cardiology, Dept. Medicine, University of Graz,A-8036 Graz, Austria
SO Lancet, (1995) 345/8949 (586).
ISSN: 0140-6736 CODEN: LANCAO
CY United Kingdom
DT Journal; Letter
FS 004 Microbiology
037 Drug Literature Index
LA English

L4 ANSWER 11 OF 15 SCISEARCH COPYRIGHT 2002 ISI (R)
AN 95:171924 SCISEARCH
GA The Genuine Article (R) Number: QK444
TI TREATMENT OF LATE LYME ***BORRELIOSIS*** WITH CEFOPERAZONE AND SULBACTAM
AU GASSER R N (Reprint); REISINGER E C; EBER B; WENDELIN I; POKAN R; ***SEINOST G*** ; KLEIN W
CS GRAZ UNIV, DEPT MED, DIV CARDIOL, BORRELIOSIS STUDY GRP, A-8036 GRAZ, AUSTRIA (Reprint)
CYA AUSTRIA
SO LANCET, (04 MAR 1995) Vol. 345, No. 8949, pp. 586.
ISSN: 0140-6736.
DT Letter; Journal
FS LIFE; CLIN
LA ENGLISH
REC Reference Count: 5

L4 ANSWER 12 OF 15 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 8
AN 1996:566266 CAPLUS
DN 125:316265
TI Cases of Lyme ***borreliosis*** resistant to conventional treatment: Improved symptoms with cephalosporin plus specific .beta.-lactamase inhibition
AU Gasser, R.; Reisinger, E.; Eber, B.; Pokan, R.; ***Seinost, G.*** ; Bergloff, J.; Horwarth, R.; Sedaj, B.; Klein, W.
CS Department Medicine, University Graz, Graz, A-8036, Austria
SO Microb. Drug Resist. (Larchmont, N. Y.) (1995), 1(4), 341-344
CODEN: MDREFJ; ISSN: 1076-6294
DT Journal
LA English
AB We present four cases of verified late Lyme ***borreliosis*** with persistent symptoms and pos. serol. despite repeated courses of high-dose i.v. penicillin G and/or cephalosporins (including cefoperazone). The patients were now treated with cefoperazone 2 g plus sulbactam 1 g bid i.v. for 14 days. At the end of treatment, patients were symptom free and have remained so for the following 12 mo. By then, IgG against

Borrelia burgdorferi had decreased. It is concluded that the addn. of .beta.-lactamase inhibitors to i.v. treatment could be beneficial in Lyme disease refractory to conventional treatment.

L4 ANSWER 13 OF 15 LIFESCI COPYRIGHT 2002 CSA
AN 95:64407 LIFESCI
TI Treatment of late Lyme ***borreliosis*** with cefoperazone and sulbactam
AU Gasser, R.N.A.; Reisinger, E.C.; Eber, B.; Wendelin, I.; Pokan, R.; ***Seinost, G.*** ; Klein, W.
CS Borreliosis Study Group, Div. Cardiol., Dep. Med., Univ. Graz, A-8036 Graz, Austria
SO LANCET, (1995) vol. 345, no. 8949, 586.
ISSN: 0099-5355.
DT Journal
FS J
LA English
AB Tazobactam has been shown to affect penicillin-binding proteins and to inhibit growth of ***Borrelia*** burgdorferi in the presence of penicillin in vitro. We report a patient with late Lyme disease refractory to intravenous treatment with penicillin and cephalosporins, in whom combined treatment with a cephalosporin plus sulbactam was beneficial. Our case suggests that B. burgdorferi may be able to develop resistance against beta-lactam antibiotics.

L4 ANSWER 14 OF 15 MEDLINE
AN 95057588 MEDLINE
DN 95057588 PubMed ID: 7968011
TI Coronary artery aneurysm in two patients with long-standing Lyme ***borreliosis*** . ***Borreliosis*** Study Group.
AU Gasser R; Watzinger N; Eber B; Luha O; Reisinger E; ***Seinost G*** ; Klein W
SO LANCET, (1994 Nov 5) 344 (8932) 1300-1.
Journal code: L0S; 2985213R. ISSN: 0140-6736.
CY ENGLAND: United Kingdom
DT Letter
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 199412
ED Entered STN: 19950110
Last Updated on STN: 19950110
Entered Medline: 19941202

L4 ANSWER 15 OF 15 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.DUPLICATE 9
AN 94341749 EMBASE
DN 1994341749
TI Coronary artery aneurysm in two patients with long-standing Lyme ***borreliosis*** [15].
AU Gasser R.; Watzinger N.; Eber B.; Luha O.; Reisinger E.; ***Seinost*** *** G.*** ; Klein W.
CS Department of Medicine, University of Graz,8036 Graz, Austria
SO Lancet, (1994) 344/8932 (1300-1301).
ISSN: 0140-6736 CODEN: LANCAO
CY United Kingdom
DT Journal; Letter

FS 004 Microbiology
018 Cardiovascular Diseases and Cardiovascular Surgery
LA English

=> e dykhuizen daniel/au
E1 207 DYKHUIZEN D E/AU
E2 1 DYKHUIZEN D E */AU
E3 15 --> DYKHUIZEN DANIEL/AU
E4 52 DYKHUIZEN DANIEL E/AU
E5 1 DYKHUIZEN H D/AU
E6 23 DYKHUIZEN M/AU
E7 12 DYKHUIZEN MARTA/AU
E8 19 DYKHUIZEN R/AU
E9 61 DYKHUIZEN R C/AU
E10 17 DYKHUIZEN R F/AU
E11 88 DYKHUIZEN R S/AU
E12 7 DYKHUIZEN ROELF/AU

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L5 67 ("DYKHUIZEN D E"/AU OR "DYKHUIZEN D E *"/AU OR "DYKHUIZEN DANIEL "/AU OR "DYKHUIZEN DANIEL E"/AU) AND BORRELI?

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L6 19 DUP REM L5 (48 DUPLICATES REMOVED)

=> d bib ab 1-
YOU HAVE REQUESTED DATA FROM 19 ANSWERS - CONTINUE? Y/(N):y

L6 ANSWER 1 OF 19 MEDLINE
AN 2002169186 IN-PROCESS
DN 21898305 PubMed ID: 11901105
TI Geographic Uniformity of the Lyme Disease Spirochete (***Borrelia*** burgdorferi) and Its Shared History With Tick Vector (Ixodes scapularis) in the Northeastern United States.
AU Qiu Wei-Gang; ***Dykhuizen Daniel E*** ; Acosta Michael S; Luft Benjamin J
CS Department of Ecology and Evolution, State University of New York, Stony Brook, New York 11794-5245.
SO GENETICS, (2002 Mar) 160 (3) 833-49.
Journal code: 0374636. ISSN: 0016-6731.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS IN-PROCESS; NONINDEXED; Priority Journals
ED Entered STN: 20020320
Last Updated on STN: 20020320
AB Over 80% of reported cases of Lyme disease in the United States occur in coastal regions of northeastern and mid-Atlantic states. The genetic structure of the Lyme disease spirochete (***Borrelia*** burgdorferi) and its main tick vector (Ixodes scapularis) was studied concurrently and comparatively by sampling natural populations of I. scapularis ticks along the East Coast from 1996 to 1998. ***Borrelia*** is genetically highly

diverse at the outer surface protein ospC. Since ***Borrelia*** is highly clonal, the ospC alleles can be used to define clones. A newly designed reverse line blotting (RLB) assay shows that up to 10 ***Borrelia*** clones can infect a single tick. The clone frequencies in ***Borrelia*** populations are the same across the Northeast. On the other hand, I. scapularis populations show strong regional divergence (among northeastern, mid-Atlantic, and southern states) as well as local differentiation. The high genetic diversity within ***Borrelia*** populations and the disparity in the genetic structure between ***Borrelia*** and its tick vector are likely consequences of strong balancing selection on local ***Borrelia*** clones. Demographically, both ***Borrelia*** and I. scapularis populations in the Northeast show the characteristics of a species that has recently expanded from a population bottleneck. Major geological and ecological events, such as the last glacial maximum (18,000 years ago) and the modern-day expansion of tick habitats, are likely causes of the observed "founder effects" for the two organisms in the Northeast. We therefore conclude that the genetic structure of B. burgdorferi has been intimately shaped by the natural history of its main vector, the northern lineage of I. scapularis ticks.

L6 ANSWER 2 OF 19 CAPLUS COPYRIGHT 2002 ACS
AN 2001:792974 CAPLUS
DN 136:82577
TI ***Borrelia*** burgdorferi: a (somewhat) clonal bacteria species. Reply to comments
AU ***Dykhuizen, Daniel E.*** ; Baranton, Guy
CS Dept. of Ecology and Evolution, SUNY Stony Brook, Stony Brook, NY, 11794, USA
SO Trends in Microbiology (2001), 9(10), 472
CODEN: TRMIEA; ISSN: 0966-842X
PB Elsevier Science Ltd.
DT Journal
LA English
AB A polemic in response to Brian Stevenson (2001) on the absence of large-scale intergenome recombination in ***Borrelia*** burgdorferi and new genes on the pathogenicity islands. Based on the atypical nucleotide compn. anal. of the vslE region only about 0.1% of the DNA in ***Borrelia*** is likely to be horizontally transferred compared with 18% of Escherichia coli, where horizontal transfer of pathogenicity islands is clearly important.
RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 3 OF 19 SCISEARCH COPYRIGHT 2002 ISI (R)
AN 2001:858664 SCISEARCH
GA The Genuine Article (R) Number: 483WG
TI ***Borrelia*** burgdorferi: a (somewhat) clonal bacterial species - Response
AU ***Dykhuizen D E (Reprint)*** ; Baranton G
CS SUNY Stony Brook, Dept Ecol & Evolut, Stony Brook, NY 11794 USA (Reprint); Inst Pasteur, Unite Bacteriol Mol & Med, F-75724 Paris 15, France
CYA USA; France
SO TRENDS IN MICROBIOLOGY, (OCT 2001) Vol. 9, No. 10, pp. 472-472.
Publisher: ELSEVIER SCIENCE LONDON, 84 THEOBALDS RD, LONDON WC1X 8RR, ENGLAND.

ISSN: 0966-842X.
DT Letter; Journal
LA English
REC Reference Count: 8

L6 ANSWER 4 OF 19 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
AN 2001356380 EMBASE
TI ***Borrelia*** burgdorferi: A (somewhat) clonal bacterial species [1] (multiple letters).
AU Stevenson B.; ***Dykhuizen D.E.*** ; Baranton G.
CS B. Stevenson, Dept. of Microbiology, Univ. of Kentucky College of Med., MS415 Chandler Medical Center, Lexington, KY 40536-0298, United States. bstev0@pop.uky.edu
SO Trends in Microbiology, (1 Oct 2001) 9/10 (471-472).
ISSN: 0966-842X CODEN: TRMIEA
PUI S 0966-842X(01)02139-4
CY United Kingdom
DT Journal; Letter
FS 004 Microbiology
LA English

L6 ANSWER 5 OF 19 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 1
AN 2001:360049 BIOSIS
DN PREV200100360049
TI The implications of a low rate of horizontal transfer in ***Borrelia***
AU ***Dykhuizen, Daniel E. (1)*** ; Baranton, Guy
CS (1) Dept of Ecology and Evolution, SUNY Stony Brook, Stony Brook, NY, 11794: DANDYK@life.bio.sunysb.edu USA
SO Trends in Microbiology, (July, 2001) Vol. 9, No. 7, pp. 344-350. print.
ISSN: 0966-842X.
DT General Review
LA English
SL English

L6 ANSWER 6 OF 19 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 2001:212011 BIOSIS
DN PREV200100212011
TI Distinct levels of genetic diversity of ***Borrelia*** burgdorferi are associated with different aspects of pathogenicity.
AU Baranton, Guy (1); Seinost, Gerald; Theodore, George; Postic, Daniele; ***Dykhuizen, Daniel***
CS (1) Unite de bacteriologie moleculaire et medicale, Institut Pasteur, 28, rue du Dr Roux, 75724, Paris cedex, 15: gbaran@pasteur.fr France
SO Research in Microbiology, (March, 2001) Vol. 152, No. 2, pp. 149-156. print.
ISSN: 0923-2508.
DT Article
LA English
SL English
AB Different species of pathogenic ***Borrelia*** show different symptoms and tick vector specificity. Even within regions where only one species is found, Lyme disease progresses very differently from one patient to another. Since ***Borrelia*** shows very little recombination either

within or between species, alleles of a gene can be used to mark clones. The ospC gene is highly variable within each species and can be used to define groups of related clones. It has been previously shown that only four out of seventeen ospC groups of ***Borrelia*** burgdorferi sensu stricto cause invasive forms of the disease. Other groups cause erythema migrans, a skin rash at the site of the tick bite, but not invasive disease, while still other groups seem to be nonpathogenic to humans. In this study we extend the analysis of the ospC gene to the other pathogenic species, ***Borrelia*** garinii and ***Borrelia*** afzelii. Only two groups in B. afzelii and four groups in B. garinii cause invasive disease. Thus, only ten out of the 58 defined ospC groups cause invasive and presumably chronic Lyme disease.

L6 ANSWER 7 OF 19 CAPLUS COPYRIGHT 2002 ACS
AN 2000:911434 CAPLUS
DN 134:67201
TI ***Borrelia*** burgdorferi and B. afzelii gene ospC fusion proteins, their sequences, and use as immunogenic compositions for immunizing animals against Lyme disease
IN Dattwyler, Raymond J.; Seinost, Gerald; ***Dykhuizen, Daniel*** ; Luft, Benjamin J.; Gomes-solecki, Maria
PA Research Foundation of State University of New York, USA; Brook Biotechnologies, Inc.
SO PCT Int. Appl., 160 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000078966	A1	20001228	WO 2000-US16915	20000619

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI US 1999-140042P P 19990618
AB The invention provides numerous gene ospC proteins, or immunogenic fragment thereof, from Lyme disease causing ***Borrelia*** , such as B. burgdorferi (families A, B, I and K) or B. afzelii (families A and B). The invention also provides numerous chimeric proteins contg. at least two of the said OspC proteins from B. burgdorferi (families A, B, I and K) or B. afzelii (families A and B). The invention further provides nucleic acid mols. encoding said chimeric OspC proteins. Still further, the invention provides the for the use of said OspC fusion proteins as immunogenic compns., which can act as vaccines to immunize animals against Lyme disease. Finally, the invention provides: (1) a method for detecting an immune response to Lyme disease which utilizes the chimeric OspC proteins and (2) the nucleic acid sequences, as well as the amino acid sequences, of the ***Borrelia*** chimeric OspC proteins. The invention relates that: (1) B. burgdorferi family A strains contain gene

ospC allele OC1; (2) B. burgdorferi family B strains contain gene ospC alleles OC2 and OC3; (3) B. burgdorferi family I strains contain gene ospC allele OC10 and (4) B. burgdorferi family K strains contain gene ospC alleles OC12 and OC13. In the example section, the invention showed the results of immunizing mice with the various OspC chimeric proteins.
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 8 OF 19 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 2
AN 2000:359172 BIOSIS
DN PREV200000359172
TI Recombinant chimeric ***borrelia*** proteins for diagnosis of Lyme disease.
AU Gomes-Solecki, Maria J. C.; Dunn, John J.; Luft, Benjamin J.; Castillo, Jonathan; ***Dykhuizen, Daniel E.*** ; Yang, Xiaohua; Glass, John D.; Dattwyler, Raymond J. (1)
CS (1) Department of Medicine, State University of New York at Stony Brook, Stony Brook, NY, 11794-8161 USA
SO Journal of Clinical Microbiology, (July, 2000) Vol. 38, No. 7, pp. 2530-2535. print.
ISSN: 0095-1137.
DT Article
LA English
SL English
AB Current serologic Lyme disease tests use whole ***borrelia*** cells as the source of antigen. These assays are difficult to standardize and to optimize for sensitivity and specificity. To help solve these problems, we constructed a library of recombinant chimeric proteins composed of portions of key antigens of ***Borrelia*** burgdorferi. These proteins were then used to develop an enzyme-linked immunosorbent assay. We compared our assay with the most sensitive of three whole-cell ***borrelia*** assays. We found that the recombinant assay could detect antibodies significantly better from early Lyme disease sera ($P < 0.05$), and had the same sensitivity for late Lyme disease sera, as the most sensitive whole-cell ***borrelia*** assay. On potentially cross-reactive sera, the recombinant assay was more specific, but not significantly so, than the best whole-cell ***borrelia*** assay. Optimization of the recombinant assay offers the potential for a significant improvement in both sensitivity and specificity.

L6 ANSWER 9 OF 19 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 3
AN 2000:387713 BIOSIS
DN PREV200000387713
TI Methods for estimating gene frequencies and detecting selection in bacterial populations.
AU Rannala, Bruce (1); Qiu, Wei-Gang; ***Dykhuizen, Daniel E.***
CS (1) Department of Ecology and Evolution, State University of New York, Stony Brook, NY, 11794-5245 USA
SO Genetics, (June, 2000) Vol. 155, No. 2, pp. 499-508. print.
ISSN: 0016-6731.
DT Article
LA English
SL English

AB Recent breakthroughs in molecular technology, most significantly the polymerase chain reaction (PCR) and in situ hybridization, have allowed the detection of genetic variation in bacterial communities without prior cultivation. These methods often produce data in the form of the presence or absence of alleles or genotypes, however, rather than counts of alleles. Using relative allele frequencies from presence-absence data as estimates of population allele frequencies tends to underestimate the frequencies of common alleles and overestimate those of rare ones, potentially biasing the results of a test of neutrality in favor of balancing selection. In this study, a maximum-likelihood estimator (MLE) of bacterial allele frequencies designed for use with presence-absence data is derived using an explicit stochastic model of the host infection (or bacterial sampling) process. The performance of the MLE is evaluated using computer simulation and a method is presented for evaluating the fit of estimated allele frequencies to the neutral infinite alleles model (IAM). The methods are applied to estimate allele frequencies at two outer surface protein loci (ospA and ospC) of the Lyme disease spirochete, ***Borrelia*** burgdorferi, infecting local populations of deer ticks (Ixodes scapularis) and to test the fit to a neutral IAM.

L6 ANSWER 10 OF 19 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 4

AN 1999:359404 BIOSIS

DN PREV199900359404

TI Four clones of ***Borrelia*** burgdorferi sensu stricto cause invasive infection in humans.

AU Seinost, Gerald; ***Dykhuizen, Daniel E.*** ; Dattwyler, Raymond J. (1); Golde, William T.; Dunn, John J.; Wang, Ing-Nang; Wormser, Gary P.; Schriefer, Martin E.; Luft, Benjamin J.

CS (1) Division of Clinical Immunology/Allergy, Department of Medicine, Health Sciences Center, State University of New York at Stony Brook, Stony Brook, NY, 11794-8161 USA

SO Infection and Immunity, (July, 1999) Vol. 67, No. 7, pp. 3518-3524. ISSN: 0019-9567.

DT Article

LA English

SL English

AB Lyme disease begins at the site of a tick bite, producing a primary infection with spread of the organism to secondary sites occurring early in the course of infection. A major outer surface protein expressed by the spirochete early in infection is outer surface protein C (OspC). In ***Borrelia*** burgdorferi sensu stricto, OspC is highly variable. Based on sequence divergence, alleles of ospC can be divided into 21 major groups. To assess whether strain differences defined by ospC group are linked to invasiveness and pathogenicity, we compared the frequency distributions of major ospC groups from ticks, from the primary erythema migrans skin lesion, and from secondary sites, principally from blood and spinal fluid. The frequency distribution of ospC groups from ticks is significantly different from that from primary sites, which in turn is significantly different from that from secondary sites. The major groups A, B, I, and K had higher frequencies in the primary sites than in ticks and were the only groups found in secondary sites. We define three categories of major ospC groups: one that is common in ticks but very rarely if ever causes human disease, a second that causes only local infection at the tick bite site, and a third that causes systemic disease.

The finding that all systemic B. burgdorferi sensu stricto infections are associated with four ospC groups has importance in the diagnosis, treatment, and prevention of Lyme disease.

L6 ANSWER 11 OF 19 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 5
AN 2000:16811 BIOSIS
DN PREV200000016811
TI Infection with multiple strains of ***Borrelia*** burgdorferi sensu stricto in patients with Lyme disease.
AU Seinost, Gerald; Golde, William T.; Berger, Bernard W.; Dunn, John J.; Qiu, Dan; Dunkin, David S.; ***Dykhuizen, Daniel E.*** ; Luft, Benjamin J.; Dattwyler, Raymond J. (1)
CS (1) Division of Allergy/Clinical Immunology, HSC 16T-040, Department of Medicine, State University of New York at Stony Brook, Stony Brook, NY, 11794-8161 USA
SO Archives of Dermatology, (Nov., 1999) Vol. 135, No. 11, pp. 1329-1333. ISSN: 0003-987X.
DT Article
LA English
SL English
AB Objective: To assess human skin biopsy specimens from erythema migrans lesions for the presence of infection with multiple strains of the Lyme disease spirochete, ***Borrelia*** burgdorferi. Design: Skin biopsy specimens were obtained prospectively from patients with erythema migrans. To determine allelic differences and strain identification of B burgdorferi, the biopsy specimens were analyzed by cold single-strand conformation polymorphism of an amplified fragment of the outer surface protein C (ospC) gene. Further single-strand conformation polymorphism patterns of amplified ospC genes from culture isolates were compared with polymerase chain reaction products obtained directly from erythema migrans biopsy specimens. Setting: A private dermatology office and a university medical center outpatient department. Patients: Sixteen patients presenting with erythema migrans. Results: Two of the 16 patients in this cohort were infected with 2 B burgdorferi sensu stricto strains, as evidence d by 2 ospC alleles in their skin biopsy results. Conclusion: This is the first documented description of the existence of more than a single strain of B burgdorferi sensu stricto in a human specimen.

L6 ANSWER 12 OF 19 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 6
AN 1999:93880 BIOSIS
DN PREV199900093880
TI Genetic diversity of ospC in a local population of ***Borrelia*** burgdorferi sensu stricto.
AU Wang, Ing-Nang; ***Dykhuizen, Daniel E. (1)*** ; Qiu, Weigang; Dunn, John J.; Bosler, Edward M.; Luft, Benjamin J.
CS (1) Dep. Ecol. Evol., State Univ. N.Y., Stony Brook, NY 11794-5245 USA
SO Genetics, (Jan., 1999) Vol. 151, No. 1, pp. 15-30. ISSN: 0016-6731.
DT Article
LA English
AB The outer surface protein, OspC, is highly variable in ***Borrelia*** burgdorferi sensu stricto, the agent of Lyme disease. We have shown that even within a single population OspC is highly variable. The variation of

ospA and ospC in the 40 infected deer ticks collected from a single site on Shelter Island, New York, was determined using PCR-SSCP. There is very strong apparent linkage disequilibrium between ospA and ospC alleles, even though they are located on separate plasmids. Thirteen discernible SSCP mobility classes for ospC were identified and the DNA sequence for each was determined. These sequences, combined with 40 GenBank sequences, allow us to define 19 major ospC groups. Sequences within a major ospC group are, on average, <1% different from each other, while sequences between major ospC groups are, on average, apprx20% different. The tick sample contains 11 major ospC groups, GenBank contains 16 groups, with 8 groups found in both samples. Thus, the ospC variation within a local population is almost as great as the variation of a similar-sized sample of the entire species. The Ewens-Watterson-Slatkin test of allele frequency showed significant deviation from the neutral expectation, indicating balancing selection for these major ospC groups. The variation represented by major ospC groups needs to be considered if the OspC protein is to be used as a serodiagnostic antigen or a vaccine.

L6 ANSWER 13 OF 19 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1998:229538 BIOSIS
DN PREV199800229538
TI Culture-confirmed reinfection of a person with different strains of ***Borrelia*** burgdorferi sensu stricto.
AU Golde, William T. (1); Robinson-Dunn, Barbara; Stobierski, Mary Grace; ***Dykhuizen, Daniel*** ; Wang, Ing-Nang; Carlson, Vernette; Stiefel, Harlan; Shiflett, Susan; Campbell, Grant L.
CS (1) Div. Allergy Dep. Med., HSCT-16-060, State Univ. N.Y. at Stony Brook, Stony Brook, NY 11794-8161 USA
SO Journal of Clinical Microbiology, (April, 1998) Vol. 36, No. 4, pp. 1015-1019.
ISSN: 0095-1137.
DT Article
LA English
AB In recent years, the utility of serum-based diagnostic testing for Lyme disease has improved substantially; however, recovery by culture of the bacterium from skin biopsies of suspected patients is still the only definitive laboratory test. Reinfection of patients has been assumed to occur but as yet has not been documented by serial isolates from the same person. We present a case of culture-confirmed reinfection of a patient in Menominee County, Michigan. ***Borrelia*** burgdorferi was isolated from the skin punch biopsy specimens during each episode of erythema migrans (EM) and was subjected to molecular strain typing, genetic analysis of two outer surface protein genes, protein profile analysis, and serum antibody response testing. Results show that these isolates are distinct strains of the bacterium and that the two episodes of EM were caused by independent infections. This report describes the documented, culture-confirmed reinfection of a human by two different strains of B. burgdorferi.

L6 ANSWER 14 OF 19 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 7
AN 1998:120708 BIOSIS
DN PREV199800120708
TI A population genetic study of ***Borrelia*** burgdorferi sensu stricto from eastern Long Island, New York, suggested frequency-dependent

selection, gene flow and host adaptation.
AU Qiu, Wei-Gang; Bosler, Edward M.; Campbell, Jason R.; Ugine, Gregory D.; Wang, Ing-Nang; Luft, Benjamin J.; ***Dykhuizen, Daniel E. (1)***
CS (1) Dep. Ecol. and Evolution, SUNY at Stony Brook, Stony Brook, NY 11794-5245 USA
SO Hereditas (Lund), (Dec., 1997) Vol. 127, No. 3, pp. 203-216. ISSN: 0018-0661.
DT Article
LA English
AB Eastern Long Island, New York, is one of the major foci of Lyme disease in the United States. As in almost all other parts of North America, Lyme disease in this region is caused by a single genomic species of spirochete, ***Borrelia*** burgdorferi sensu stricto. For three consecutive years, natural populations of Lyme ***Borrelia*** in this region were sampled and studied for gene flow among different locations, changes in population structure over time, and selective forces. The genetic diversity of ***Borrelia*** populations was measured at the outer surface protein A (ospA) locus using Cold Single-Stranded Conformation Polymorphism (Cold SSCP) analysis. The ***Borrelia*** populations were found to be highly polymorphic within any of thirteen local populations. Ewens-Watterson tests of neutrality revealed that the high level of genetic diversity within local ***Borrelia*** populations is maintained by balancing selection. Frequency-dependent selection for the different strains distinguished by the ospA alleles is likely the mechanism of the balancing selection. Allele frequency distributions of ***Borrelia*** populations were homogeneous across the region in any particular year, although different infection rates of local tick (Ixodes scapularis) populations suggested that the ***Borrelia*** populations were at least partially isolated. Since the allele frequency distribution changed over time. while remaining homogeneous over space, the nearly uniform allele frequency distribution across the region cannot be explained by recent geographic expansion from a single population. This uniform distribution across the region thus may be maintained by selection, or by a significant amount of migration or both. The genetic structure of B. burgdorferi sensu stricto also differed between spirochetes infecting nymphal ticks and those infecting adult ticks. Since larval and nymphal ticks have distinctly different host feeding preferences, host adaptation of spirochete populations is implied. This distinction and an animal study using chipmunks suggest that ticks infected by ***Borrelia*** as larvae may have high mortality in the wild. This study represents a genetic analysis of local populations of a bacterial species.

L6 ANSWER 15 OF 19 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 8
AN 1996:156539 BIOSIS
DN PREV199698728674
TI Multiple infections of Ixodes scapularis ticks by ***Borrelia*** burgdorferi as revealed by single-strand conformation polymorphism analysis.
AU Guttman, David S.; Wang, Pauline W.; Wang, Ing-Nang; Bosler, Edward M.; Luft, Benjamin J.; ***Dykhuizen, Daniel (1)***
CS (1) Dep. Ecol. Evol., SUNY at Stony Brook, Stony Brook, NY 11794 USA
SO Journal of Clinical Microbiology, (1996) Vol. 34, No. 3, pp. 652-656. ISSN: 0095-1137.

DT Article
LA English
AB The genetic heterogeneity of the spirochete ***Borrelia*** burgdorferi within single adult black-legged ticks from Shelter Island, N.Y., was determined by cold, single-strand conformation polymorphism (SSCP) analysis. The central region of the ospA gene of B. burgdorferi from infected ticks was amplified by nested PCR. Amplified product of the correct size was obtained from 20 of 45 ticks (44%). This is the fraction of ticks that is expected to be infected with B. burgdorferi. Four variant classes were determined by SSCP analysis. Eight ticks were infected with a single variant, nine ticks were infected with two variants, two ticks were infected with three variants, and one tick was infected with all four variants. DNA from each variant was sequenced. Five different sequences were found. The sequence of each variant was different from that of another variant by a single base. SSCP analysis could distinguish three of the four single-base changes found in the region.

L6 ANSWER 16 OF 19 CAPLUS COPYRIGHT 2002 ACS
AN 1995:593643 CAPLUS
TI Identification of an immunologically important hypervariable domin of major outer surface protein A of ***Borrelia*** burgdorferi
AU McGrath, Barbara C.; Dunn, John J.; Gorgone, Gina; Guttman, David; ***Dykhuizen, Daniel*** ; Luft, Benjamin j.
CS Biology Department, Brookhaven National Laboratory, Upton, NY, 11973, USA
SO Infect. Immun. (1995), 63(6), 2390
CODEN: INFIBR; ISSN: 0019-9567
DT Journal; Errata
LA English
AB Unavailable

L6 ANSWER 17 OF 19 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 9
AN 1995:221131 BIOSIS
DN PREV199598235431
TI Identification of an immunologically important hypervariable domain of major outer surface protein A of ***Borrelia*** burgdorferi.
AU McGrath, Barbara C.; Dunn, John J.; Gorgone, Gina; Luft, Benjamin J.; Guttman, David; ***Dykhuizen, Daniel***
CS Biol. Dep., Brookhaven Natl. Lab., Upton, NY 11973 USA
SO Infection and Immunity, (1995) Vol. 63, No. 4, pp. 1356-1361.
ISSN: 0019-9567.
DT Article
LA English
AB The gene for the major outer surface protein A (OspA) from several clinically obtained strains of ***Borrelia*** burgdorferi, the cause of Lyme disease, has been cloned, sequenced, and expressed in Escherichia coli by using a T7-based expression system (J. J. Dunn, B. N. Lade, and A. G. Barbour, Protein Expr. Purif. 1:159-168, 1990). All of the OspAs have a single conserved tryptophan at residue 216 or, in some cases, 217; however, the region of the protein flanking the tryptophan is hypervariable, as determined by a moving-window population analysis of ospA from 15 European and North American isolates of B. burgdorferi. Epitope-mapping studies using chemically cleaved OspA and a TrpE-OspA fusion have indicated that this hypervariable region is important for immune recognition. Biophysical analysis, including fluorescence and

circular dichroism spectroscopy, have indicated that the conserved tryptophan is buried in a hydrophobic environment. Polar amino acid side chains flanking the tryptophan are likely to be exposed to the hydrophilic solvent. The hypervariability of these solvent-exposed amino acid residues may contribute to the antigenic variation in OspA. To test this, we have performed site-directed mutagenesis to replace some of the potentially exposed amino acid side chains in the B31 protein with the analogous residues of a ***Borrelia*** garinii strain, K48. The altered proteins were then analyzed by Western blot (immunoblot) with monoclonal antibodies which bind OspA on the surface of the intact B31 spirochete. Our results indicate that specific amino acid changes near the tryptophan can abolish the reactivity of OspA to these monoclonal antibodies, which is an important consideration in the design of vaccines based on recombinant OspA.

L6 ANSWER 18 OF 19 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 10
AN 1994:18129 BIOSIS
DN PREV199497031129
TI ***Borrelia*** burgdorferi is clonal: Implications for taxonomy and vaccine development.
AU ***Dykhuizen, Daniel E.*** ; Polin, David S.; Dunn, John J.; Wilske, Bettina; Preac-Mursic, Vera; Dattwyler, Raymond J.; Luft, Benjamin J. (1)
CS (1) Dep. Med., Health Sci. Cent., State Univ. New York, Stony Brook, NY 11794 USA
SO Proceedings of the National Academy of Sciences of the United States of America, (1993) Vol. 90, No. 21, pp. 10163-10167.
ISSN: 0027-8424.
DT Article
LA English
AB The chromosomal genes fla and p93 and the ospA gene from a linear plasmid were sequenced from up to 15 isolates of ***Borrelia*** burgdorferi, which causes Lyme ***borreliosis*** in man. Comparison of the gene trees provides no evidence for genetic exchange between chromosomal genes, suggesting B. burgdorferi is strictly clonal. Comparison of the chromosomal gene trees with that of the plasmid-encoded ospA reveals that plasmid transfer between clones is rare. Evidence for intra-genic recombination was found in only a single ospA allele. The analysis reveals three common clones and a number of rare clones that are so highly divergent that vaccines developed against one are unlikely to provide immunity to organisms from others. Consequently, an understanding of the geographic and genetic variability of B. burgdorferi will prove essential for the development of effective vaccines and programs for control. While the major clones might be regarded as different species, the clonal population structure, the geographic localization, and the widespread incidence of Lyme disease suggest that B. burgdorferi should remain the same for the entire array of organisms.

L6 ANSWER 19 OF 19 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 11
AN 1993:469442 BIOSIS
DN PREV199345092567
TI Biochemical and biophysical characterization of the major outer surface protein from North American and European isolates of ***Borrelia*** burgdorferi.

AU McGrath, Barbara C. (1); Dunn, John J. (1); France, Louisa L.; Jaing, Wei;
Dykhuizen, Daniel ; Polin, David; Gorgone, Gina; Luft, Benjamin
CS (1) Biol. Dep., Brookhaven Natl. Lat., Upton, NY 11973
SO Ginsberg, H. S. [Editor]; Brown, F. [Editor]; Chanok, R. M. [Editor];
Lerner, R. A. [Editor]. Vaccines (Cold Spring Harbor), (1993) Vol. 93, pp.
365-370. Vaccines (Cold Spring Harbor); Modern approaches to new vaccines
including prevention of AIDS.
Publisher: Cold Spring Harbor Laboratory Press 10 Skyline Drive,
Plainview, New York 11803, USA.
Meeting Info.: Tenth Annual Meeting Cold Spring Harbor, New York, USA
September 1992
ISSN: 0899-4056. ISBN: 0-87969-383-5.
DT Article
LA English

=> e luft benjamin/au
E1 2 LUFT BARBARA/AU
E2 1 LUFT BENHAMIN J/AU
E3 11 --> LUFT BENJAMIN/AU
E4 90 LUFT BENJAMIN J/AU
E5 4 LUFT BERTHOLD/AU
E6 9 LUFT BERTOLD/AU
E7 68 LUFT C/AU
E8 1 LUFT C D/AU
E9 1 LUFT C F/AU
E10 2 LUFT CARL A/AU
E11 2 LUFT CARL ALLEN/AU
E12 1 LUFT CARLOS AUGUSTO/AU

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J"/AU) AND BORRELI?

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L8 52 DUP REM L7 (21 DUPLICATES REMOVED)

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YOU HAVE REQUESTED DATA FROM 52 ANSWERS - CONTINUE? Y/(N):y

L8 ANSWER 1 OF 52 CAPLUS COPYRIGHT 2002 ACS
AN 2002:157827 CAPLUS
TI Chimeric OspC-OspA proteins of ***Borrelia*** burgdorferi as vaccines
and immunodiagnostics for Lyme disease
IN ***Luft, Benjamin J.*** ; Dunn, John J.
PA Research Foundation of the State University of New York, USA; Brookhaven
Sciences Associates, Llc
SO PCT Int. Appl., 277 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 2
PATENT NO. KIND DATE APPLICATION NO. DATE

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PI WO 2002016422 A2 20020228 WO 2001-US24736 20010807
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRAI US 2000-226484P P 20000818
US 2000-666017 A2 20000919
AB Novel chimeric nucleic acids, encoding chimeric ***Borrelia*** proteins comprising OspC or an antigenic fragment thereof and OspA or an antigenic fragment thereof, are disclosed. Chimeric proteins encoded by the nucleic acid sequences are also disclosed. The chimeric proteins are useful as vaccine immunogens against Lyme ***borreliosis*** , as well as for immunodiagnostic reagents.

L8 ANSWER 2 OF 52 CAPLUS COPYRIGHT 2002 ACS
AN 2002:157826 CAPLUS
TI Altered OspA of ***Borrelia*** burgdorferi for Lyme disease vaccines and diagnostics
IN ***Luft, Benjamin J.*** ; Dunn, John J.
PA Research Foundation of the State University of New York, USA; Brookhaven Science Associates, LLC
SO PCT Int. Appl., 217 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 2
PATENT NO. KIND DATE APPLICATION NO. DATE
---------- ---- -------- ---------- --------
PI WO 2002016421 A2 20020228 WO 2001-US25852 20010817
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRAI US 2000-226484P P 20000818
AB Provided herein are OspA polypeptides from Lyme Disease-causing ***Borrelia*** having certain alteration(s). In one embodiment, the alteration(s) increase the conformational stability of the OspA polypeptide contg. the alteration(s) while maintaining at least some of the antigenicity of the corresponding unaltered OspA polypeptide. In another embodiment, the altered OspA polypeptide has reduced cross-reactivity to human leukocyte function-assocd. antigen 1, as compared to the corresponding unaltered OspA polypeptide.

L8 ANSWER 3 OF 52 MEDLINE

AN 2002169186 IN-PROCESS
DN 21898305 PubMed ID: 11901105
TI Geographic Uniformity of the Lyme Disease Spirochete (***Borrelia*** burgdorferi) and Its Shared History With Tick Vector (Ixodes scapularis) in the Northeastern United States.
AU Qiu Wei-Gang; Dykhuizen Daniel E; Acosta Michael S; ***Luft Benjamin*** *** J***
CS Department of Ecology and Evolution, State University of New York, Stony Brook, New York 11794-5245.
SO GENETICS, (2002 Mar) 160 (3) 833-49.
Journal code: 0374636. ISSN: 0016-6731.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS IN-PROCESS; NONINDEXED; Priority Journals
ED Entered STN: 20020320
Last Updated on STN: 20020320
AB Over 80% of reported cases of Lyme disease in the United States occur in coastal regions of northeastern and mid-Atlantic states. The genetic structure of the Lyme disease spirochete (***Borrelia*** burgdorferi) and its main tick vector (Ixodes scapularis) was studied concurrently and comparatively by sampling natural populations of I. scapularis ticks along the East Coast from 1996 to 1998. ***Borrelia*** is genetically highly diverse at the outer surface protein ospC. Since ***Borrelia*** is highly clonal, the ospC alleles can be used to define clones. A newly designed reverse line blotting (RLB) assay shows that up to 10 ***Borrelia*** clones can infect a single tick. The clone frequencies in ***Borrelia*** populations are the same across the Northeast. On the other hand, I. scapularis populations show strong regional divergence (among northeastern, mid-Atlantic, and southern states) as well as local differentiation. The high genetic diversity within ***Borrelia*** populations and the disparity in the genetic structure between ***Borrelia*** and its tick vector are likely consequences of strong balancing selection on local ***Borrelia*** clones. Demographically, both ***Borrelia*** and I. scapularis populations in the Northeast show the characteristics of a species that has recently expanded from a population bottleneck. Major geological and ecological events, such as the last glacial maximum (18,000 years ago) and the modern-day expansion of tick habitats, are likely causes of the observed "founder effects" for the two organisms in the Northeast. We therefore conclude that the genetic structure of B. burgdorferi has been intimately shaped by the natural history of its main vector, the northern lineage of I. scapularis ticks.

L8 ANSWER 4 OF 52 CAPLUS COPYRIGHT 2002 ACS
AN 2002:199840 CAPLUS
TI Approaches toward the directed design of a vaccine against ***Borrelia*** burgdorferi
AU ***Luft, Benjamin J.*** ; Dunn, John J.; Lawson, Catherine L.
CS Department of Medicine, State University of New York at Stony Brook, Stony Brook, NY, 11794-8160, USA
SO Journal of Infectious Diseases (2002), 185(Suppl. 1), S46-S51
CODEN: JIDIAQ; ISSN: 0022-1899
PB University of Chicago Press
DT Journal
LA English

AB The overall efficacy of a recombinant vaccine for Lyme disease that is effective worldwide will depend upon the selection of one or more immunoprotective target(s) and the frequency of genetic variation, which can alter the antigenicity of the immunoprotective epitopes of the target proteins. Careful delineation of these protective epitopes on target antigens is essential for the development of vaccine candidates as well as for understanding the limitations of such vaccines. Structural models of these targets will provide crit. information about conformation and specific residue surface accessibility for defining protective epitopes. Co-crystal structures with Fab fragments of protective antibodies will further delineate crit. antigen surfaces. Population genetics will provide vital information on the heterogeneity of these proteins. Detailed epitope mapping will provide the information needed for the bioengineering of antigens needed to expand the specificity of a candidate vaccine.

L8 ANSWER 5 OF 52 MEDLINE
AN 2002128842 IN-PROCESS
DN 21853537 PubMed ID: 11865439
TI Approaches toward the Directed Design of a Vaccine against ***Borrelia*** burgdorferi.
AU ***Luft Benjamin J*** ; Dunn John J; Lawson Catherine L
CS Department of Medicine, State University of New York at Stony Brook, Stony Brook, NY 11794-8160, USA.. bluft@mail.som.sunysb.edu
SO JOURNAL OF INFECTIOUS DISEASES, (2002 Feb 15) 185 (4 Suppl 1) S46-51. Journal code: 0413675. ISSN: 0022-1899.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS IN-PROCESS; NONINDEXED; Abridged Index Medicus Journals; Priority Journals
ED Entered STN: 20020227
Last Updated on STN: 20020227
AB The overall efficacy of a recombinant vaccine for Lyme disease that is effective worldwide will depend upon the selection of one or more immunoprotective target(s) and the frequency of genetic variation, which can alter the antigenicity of the immunoprotective epitopes of the target proteins. Careful delineation of these protective epitopes on target antigens is essential for the development of vaccine candidates as well as for understanding the limitations of such vaccines. Structural models of these targets will provide critical information about conformation and specific residue surface accessibility for defining protective epitopes. Co-crystal structures with Fab fragments of protective antibodies will further delineate critical antigen surfaces. Population genetics will provide vital information on the heterogeneity of these proteins. Detailed epitope mapping will provide the information needed for the bioengineering of antigens needed to expand the specificity of a candidate vaccine.

L8 ANSWER 6 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 1
AN 2001:384858 BIOSIS
DN PREV200100384858
TI Chimeric proteins comprising ***borrelia*** polypeptides and uses therefor.
AU Dunn, John J. (1); ***Luft, Benjamin J.***
CS (1) Bellport, NY USA

ASSIGNEE: Research Foundation State University of New York, Stony Brook, NY, USA; Brookhaven Science Associates
PI US 6248562 June 19, 2001
SO Official Gazette of the United States Patent and Trademark Office Patents, (June 19, 2001) Vol. 1247, No. 3, pp. No Pagination. e-file. ISSN: 0098-1133.
DT Patent
LA English
AB Chimeric nucleic acids encoding chimeric ***Borrelia*** proteins consisting of at least two antigenic polypeptides from corresponding and/or non-corresponding proteins from the same and/or different species of ***Borrelia*** , are disclosed. Chimeric proteins encoded by the nucleic acid sequences are also disclosed. The chimeric proteins are useful as vaccine immunogens against Lyme ***borreliosis*** , as well as for immunodiagnostic reagents.

L8 ANSWER 7 OF 52 CAPLUS COPYRIGHT 2002 ACS
AN 2000:911434 CAPLUS
DN 134:67201
TI ***Borrelia*** burgdorferi and B. afzelii gene ospC fusion proteins, their sequences, and use as immunogenic compositions for immunizing animals against Lyme disease
IN Dattwyler, Raymond J.; Seinost, Gerald; Dykhuizen, Daniel; ***Luft,*** *** Benjamin J.*** ; Gomes-solecki, Maria
PA Research Foundation of State University of New York, USA; Brook Biotechnologies, Inc.
SO PCT Int. Appl., 160 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000078966	A1	20001228	WO 2000-US16915	20000619

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI US 1999-140042P P 19990618
AB The invention provides numerous gene ospC proteins, or immunogenic fragment thereof, from Lyme disease causing ***Borrelia*** , such as B. burgdorferi (families A, B, I and K) or B. afzelii (families A and B). The invention also provides numerous chimeric proteins contg. at least two of the said OspC proteins from B. burgdorferi (families A, B, I and K) or B. afzelii (families A and B). The invention further provides nucleic acid mols. encoding said chimeric OspC proteins. Still further, the invention provides the for the use of said OspC fusion proteins as immunogenic compns., which can act as vaccines to immunize animals against Lyme disease. Finally, the invention provides: (1) a method for detecting an immune response to Lyme disease which utilizes the chimeric OspC

proteins and (2) the nucleic acid sequences, as well as the amino acid sequences, of the ***Borrelia*** chimeric OspC proteins. The invention relates that: (1) B. burgdorferi family A strains contain gene ospC allele OC1; (2) B. burgdorferi family B strains contain gene ospC alleles OC2 and OC3; (3) B. burgdorferi family I strains contain gene ospC allele OC10 and (4) B. burgdorferi family K strains contain gene ospC alleles OC12 and OC13. In the example section, the invention showed the results of immunizing mice with the various OspC chimeric proteins.
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 8 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 2
AN 2000:359172 BIOSIS
DN PREV200000359172
TI Recombinant chimeric ***borrelia*** proteins for diagnosis of Lyme disease.
AU Gomes-Solecki, Maria J. C.; Dunn, John J.; ***Luft, Benjamin J.*** ; Castillo, Jonathan; Dykhuizen, Daniel E.; Yang, Xiaohua; Glass, John D.; Dattwyler, Raymond J. (1)
CS (1) Department of Medicine, State University of New York at Stony Brook, Stony Brook, NY, 11794-8161 USA
SO Journal of Clinical Microbiology, (July, 2000) Vol. 38, No. 7, pp. 2530-2535. print.
ISSN: 0095-1137.
DT Article
LA English
SL English
AB Current serologic Lyme disease tests use whole ***borrelia*** cells as the source of antigen. These assays are difficult to standardize and to optimize for sensitivity and specificity. To help solve these problems, we constructed a library of recombinant chimeric proteins composed of portions of key antigens of ***Borrelia*** burgdorferi. These proteins were then used to develop an enzyme-linked immunosorbent assay. We compared our assay with the most sensitive of three whole-cell ***borrelia*** assays. We found that the recombinant assay could detect antibodies significantly better from early Lyme disease sera ($P < 0.05$), and had the same sensitivity for late Lyme disease sera, as the most sensitive whole-cell ***borrelia*** assay. On potentially cross-reactive sera, the recombinant assay was more specific, but not significantly so, than the best whole-cell ***borrelia*** assay. Optimization of the recombinant assay offers the potential for a significant improvement in both sensitivity and specificity.

L8 ANSWER 9 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 3
AN 2001:23841 BIOSIS
DN PREV200100023841
TI Structural identification of a key protective B-cell epitope in Lyme disease antigen OspA.
AU Ding, Wei; Huang, Xiaolin; Yang, Xiaohua; Dunn, John J.; ***Luft,*** *** Benjamin J.*** ; Koide, Shohei; Lawson, Catherine L. (1)
CS (1) Department of Chemistry, Rutgers University, 610 Taylor Road, Piscataway, NJ, 08854: Shohei_Koide@urmc.rochester.edu, lawson@rutchem.rutgers.edu USA

SO Journal of Molecular Biology, (6 October, 2000) Vol. 302, No. 5, pp. 1153-1164. print.
ISSN: 0022-2836.
DT Article
LA English
SL English
AB Outer surface protein A (OspA) is a major lipoprotein of the ***Borrelia*** burgdorferi spirochete, the causative agent of Lyme disease. Vaccination with OspA generates an immune response that can prevent bacterial transmission to a mammalian host during the attachment of an infected tick. However, the protective capacity of immune sera cannot be predicted by measuring total anti-OspA antibody. The murine monoclonal antibody LA-2 defines an important protective B-cell epitope of OspA against which protective sera have strong levels of reactivity. We have now mapped the LA-2 epitope of OspA using both NMR chemical-shift perturbation measurements in solution and X-ray crystal structure determination. LA-2 recognizes the three surface-exposed loops of the C-terminal domain of OspA that are on the tip of the elongated molecule most distant from the lipid-modified N terminus. The structure suggests that the natural variation at OspA sequence position 208 in the first loop is a major limiting factor for antibody cross-reactivity between different Lyme disease-causing ***Borrelia*** strains. The unusual Fab-dominated lattice of the crystal also permits a rare view of antigen flexibility within an antigen:antibody complex. These results provide a rationale for improvements in OspA-based vaccines and suggest possible designs for more direct tests of antibody protective levels in vaccinated individuals.

L8 ANSWER 10 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 2000:431789 BIOSIS
DN PREV200000431789
TI Practice guidelines for the treatment of lyme disease.
AU Wormser, Gary P. (1); Nadelman, Robert B.; Dattwyler, Raymond J.; Dennis, David T.; Shapiro, Eugene D.; Steere, Allen C.; Rush, Thomas J.; Rahn, Daniel W.; Coyle, Patricia K.; Persing, David H.; Fish, Durland; ***Luft, Benjamin J.***
CS (1) Westchester Medical Center, Room 209 SE, Macy Pavilion, Valhalla, NY, 10595 USA
SO Clinical Infectious Diseases, (July, 2000) Vol. 31, No. Supplement 1, pp. S1-S14. print.
ISSN: 1058-4838.
DT Article
LA English
SL English

L8 ANSWER 11 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 4
AN 1999:359404 BIOSIS
DN PREV199900359404
TI Four clones of ***Borrelia*** burgdorferi sensu stricto cause invasive infection in humans.
AU Seinost, Gerald; Dykhuizen, Daniel E.; Dattwyler, Raymond J. (1); Golde, William T.; Dunn, John J.; Wang, Ing-Nang; Wormser, Gary P.; Schriefer, Martin E.; ***Luft, Benjamin J.***
CS (1) Division of Clinical Immunology/Allergy, Department of Medicine, Health Sciences Center, State University of New York at Stony Brook, Stony

Brook, NY, 11794-8161 USA
SO Infection and Immunity, (July, 1999) Vol. 67, No. 7, pp. 3518-3524. ISSN: 0019-9567.
DT Article
LA English
SL English
AB Lyme disease begins at the site of a tick bite, producing a primary infection with spread of the organism to secondary sites occurring early in the course of infection. A major outer surface protein expressed by the spirochete early in infection is outer surface protein C (OspC). In ***Borrelia*** burgdorferi sensu stricto, OspC is highly variable. Based on sequence divergence, alleles of ospC can be divided into 21 major groups. To assess whether strain differences defined by ospC group are linked to invasiveness and pathogenicity, we compared the frequency distributions of major ospC groups from ticks, from the primary erythema migrans skin lesion, and from secondary sites, principally from blood and spinal fluid. The frequency distribution of ospC groups from ticks is significantly different from that from primary sites, which in turn is significantly different from that from secondary sites. The major groups A, B, I, and K had higher frequencies in the primary sites than in ticks and were the only groups found in secondary sites. We define three categories of major ospC groups: one that is common in ticks but very rarely if ever causes human disease, a second that causes only local infection at the tick bite site, and a third that causes systemic disease. The finding that all systemic B. burgdorferi sensu stricto infections are associated with four ospC groups has importance in the diagnosis, treatment, and prevention of Lyme disease.

L8 ANSWER 12 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 2000:16811 BIOSIS
DN PREV200000016811
TI Infection with multiple strains of ***Borrelia*** burgdorferi sensu stricto in patients with Lyme disease.
AU Seinost, Gerald; Golde, William T.; Berger, Bernard W.; Dunn, John J.; Qiu, Dan; Dunkin, David S.; Dykhuizen, Daniel E.; ***Luft, Benjamin*** *** J.*** ; Dattwyler, Raymond J. (1)
CS (1) Division of Allergy/Clinical Immunology, HSC 16T-040, Department of Medicine, State University of New York at Stony Brook, Stony Brook, NY, 11794-8161 USA
SO Archives of Dermatology, (Nov., 1999) Vol. 135, No. 11, pp. 1329-1333. ISSN: 0003-987X.
DT Article
LA English
SL English
AB Objective: To assess human skin biopsy specimens from erythema migrans lesions for the presence of infection with multiple strains of the Lyme disease spirochete, ***Borrelia*** burgdorferi. Design: Skin biopsy specimens were obtained prospectively from patients with erythema migrans. To determine allelic differences and strain identification of B burgdorferi, the biopsy specimens were analyzed by cold single-strand conformation polymorphism of an amplified fragment of the outer surface protein C (ospC) gene. Further single-strand conformation polymorphism patterns of amplified ospC genes from culture isolates were compared with polymerase chain reaction products obtained directly from erythema migrans biopsy specimens. Setting: A private dermatology office and a university

medical center outpatient department. Patients: Sixteen patients presenting with erythema migrans. Results: Two of the 16 patients in this cohort were infected with 2 B burgdorferi sensu stricto strains, as evidence d by 2 ospC alleles in their skin biopsy results. Conclusion: This is the first documented description of the existence of more than a single strain of B burgdorferi sensu stricto in a human specimen.

L8 ANSWER 13 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 5
AN 1999:437912 BIOSIS
DN PREV199900437912
TI 1H, 13C, and 15N NMR backbone assignments of 37 kDa surface antigen OspC from ***Borrelia*** burgdorferi.
AU Huang, Xiaolin; Link, Karl; Koide, Akiko; Dunn, John J.; ***Luft,*** *** Benjamin J.*** ; Koide, Shohei (1)
CS (1) Department of Biochemistry and Biophysics, University of Rochester Medical Center, Rochester, NY, 14642 USA
SO Journal of Biomolecular NMR, (July, 1999) Vol. 14, No. 3, pp. 283-284. ISSN: 0925-2738.
DT Article
LA English

L8 ANSWER 14 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 6
AN 1999:93880 BIOSIS
DN PREV199900093880
TI Genetic diversity of ospC in a local population of ***Borrelia*** burgdorferi sensu stricto.
AU Wang, Ing-Nang; Dykhuizen, Daniel E. (1); Qiu, Weigang; Dunn, John J.; Bosler, Edward M.; ***Luft, Benjamin J.***
CS (1) Dep. Ecol. Evol., State Univ. N.Y., Stony Brook, NY 11794-5245 USA
SO Genetics, (Jan., 1999) Vol. 151, No. 1, pp. 15-30. ISSN: 0016-6731.
DT Article
LA English
AB The outer surface protein, OspC, is highly variable in ***Borrelia*** burgdorferi sensu stricto, the agent of Lyme disease. We have shown that even within a single population OspC is highly variable. The variation of ospA and ospC in the 40 infected deer ticks collected from a single site on Shelter Island, New York, was determined using PCR-SSCP. There is very strong apparent linkage disequilibrium between ospA and ospC alleles, even though they are located on separate plasmids. Thirteen discernible SSCP mobility classes for ospC were identified and the DNA sequence for each was determined. These sequences, combined with 40 GenBank sequences, allow us to define 19 major ospC groups. Sequences within a major ospC group are, on average, <1% different from each other, while sequences between major ospC groups are, on average, apprx20% different. The tick sample contains 11 major ospC groups, GenBank contains 16 groups, with 8 groups found in both samples. Thus, the ospC variation within a local population is almost as great as the variation of a similar-sized sample of the entire species. The Ewens-Watterson-Slatkin test of allele frequency showed significant deviation from the neutral expectation, indicating balancing selection for these major ospC groups. The variation represented by major ospC groups needs to be considered if the OspC protein is to be used as a serodiagnostic antigen or a vaccine.

L8 ANSWER 15 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 7
AN 1998:386376 BIOSIS
DN PREV199800386376
TI NMR identification of epitopes of lyme disease antigen OspA to monoclonal antibodies.
AU Huang, Xiaolin; Yang, Xiaohua; ***Luft, Benjamin J.*** ; Koide, Shohei (1)
CS (1) Dep. Biochemistry Biophysics, Univ. Rochester Med. Cent., Rochester, NY 14642 USA
SO Journal of Molecular Biology, (Aug. 7, 1998) Vol. 281, No. 1, pp. 61-67. ISSN: 0022-2836.
DT Article
LA English
AB Outer surface protein A (OspA) from the Lyme disease spirochete ***Borrelia*** burgdorferi has been a focus of vaccine development. We have identified epitopes of OspA to two monoclonal antibodies (mAbs) by comparing NMR chemical shifts of free OspA and those in Fab complexes. Deuteration of non-labile protons in OspA extended the size limit of this technique so that it was applicable to the 78 kDa complexes of OspA and the Fab fragment. The epitope identified by NMR to an mAb, 184.1, agrees well with that previously defined by the crystal structure of the same complex, indicating the ability of the NMR method to accurately map an epitope in a large protein complex. The technique mapped the epitope to mAb 336, a mAb of clinical interest, to a region centered at the C-terminal alpha-helix. The results provides a basis for rational design of OspA-based Lyme disease vaccines.

L8 ANSWER 16 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 8
AN 1997:487897 BIOSIS
DN PREV199799787100
TI Duration of immunity to reinfection with tick-transmitted ***Borrelia*** burgdorferi in naturally infected mice.
AU Piesman, Joseph (1); Dolan, Marc C.; Happ, Christine M.; ***Luft,*** *** Benhamin J.*** ; Rooney, Sean E.; Mather, Thomas N.; Golde, William T.
CS (1) CDC/DVBID, PO Box 2087, Ft. Collins, CO 80522 USA
SO Infection and Immunity, (1997) Vol. 65, No. 10, pp. 4043-4047. ISSN: 0019-9567.
DT Article
LA English
AB The ability of naturally infected and cured mice to resist reinfection with tick-transmitted ***Borrelia*** burgdorferi was tested over a 1-year period. All of the mice were resistant to reinfection when they were challenged at 1.5 months after cure. The majority of animals were resistant to reinfection for up to 10.5 months after cure, but this resistance was lost at 1 year after cure. Both protected and unprotected animals showed a diverse array of antibodies on Western immunoblots. Protection was not associated with the killing of spirochetes in ticks, and naturally infected mice produced no antibodies to outer surface protein A (OSP A). The titers to whole ***Borrelia*** sonicate and OSP C, however, remained high throughout the 1-year study period. The levels of ***borreliacidal*** antibodies were highest in the 1.5 month-after-cure group. Natural immunity to reinfection with B.

burgdorferi is limited in time, is complex, and may involve both humoral and cellular components.

L8 ANSWER 17 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 9
AN 1997:221459 BIOSIS
DN PREV199799513175
TI Crystal structure of Lyme disease antigen outer surface protein A complexed with an Fab.
AU Li, Hong; Dunn, John J.; ***Luft, Benjamin J.*** ; Lawson, Catherine L. (1)
CS (1) Biol. Dep., Brookhaven Natl. Lab., Build. 463, Upton, NY 11973 USA
SO Proceedings of the National Academy of Sciences of the United States of America, (1997) Vol. 94, No. 8, pp. 3584-3589.
ISSN: 0027-8424.
DT Article
LA English
AB OspA (outer surface protein A) is an abundant immunogenic lipoprotein of the Lyme disease spirochete ***Borrelia*** burgdorferi. The crystal structure of a soluble recombinant form of OspA was solved in a complex with the Fab fragment of mouse monoclonal antibody 184.1 and refined to a resolution of 1.9 ANG . OspA has a repetitive antiparallel beta topology with an unusual nonglobular region of "freestanding" sheet connecting globular N- and C-terminal domains. Arrays of residues with alternating charges are a predominant feature of the folding pattern in the nonglobular region. The 184.1 epitope overlaps with a well conserved surface in the N-terminal domain, and a hydrophobic cavity buried in a positively charged cleft in the C-terminal domain is a potential binding site for an unknown ligand. An exposed variable region on the C-terminal domain of OspA is predicted to be an important factor in the worldwide effectiveness of OspA-based vaccines.

L8 ANSWER 18 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 10
AN 1997:440311 BIOSIS
DN PREV199799739514
TI Simultaneous expression of ***Borrelia*** OspA and OspC and IgM response in cerebrospinal fluid in early neurologic lyme disease.
AU Schutzer, Steven E. (1); Coyle, P. K.; Krupp, Lauren B.; Deng, Zhidian; Belman, Anita L.; Dattwyler, Raymond; ***Luft, Benjamin J.***
CS (1) Dep. Med., Univ. Med. Dent. N.J., MSB E573, 185 S. Orange Ave., Newark, NJ 07103 USA
SO Journal of Clinical Investigation, (1997) Vol. 100, No. 4, pp. 763-767.
ISSN: 0021-9738.
DT Article
LA English
AB Lyme disease is the major tick-borne disease, caused by ***Borrelia*** burgdorferi (Bb). Neurological involvement is common in all stages. In vivo expression of Bb antigens (Ags) and the immune response to them has not been well investigated in the cerebrospinal fluid (CSF). Upregulation of outer surface protein (Osp) C and concomitant downregulation of OspA before tick inoculation of the spirochete has been reported in skin and blood in animals. CSF OspA Ag in early disease suggests otherwise in CSF. Early Ag expression and IgM response in human CSF was investigated here. Paired CSF and serum was collected from 16 early, predominantly erythema

migrans Lyme disease patients with neurologic problems, 13 late Lyme disease patients, and 19 other neurologic disease (OND) controls. Samples were examined for IgM reactivity to recombinant Bb-specific Osps using ELISA and immunoblot. Of 12 early Lyme disease patients with neurologic involvement with both CSF and serum IgM against OspC, 7 (58%) had IgM to OspA (n = 5) or OspB (n = 2) that was restricted to the CSF, not serum. Overall, 12 of 16 (75%) of these early Lyme disease patients with neurologic involvement had CSF and serum IgM against OspC. Only 3 of 13 (23%) late Lyme disease patients and none of 19 OND controls had CSF IgM directed against OspC. In conclusion, in CSF, OspC and OspA can be coexpressed, and IgM response to them occurs in early Lyme disease patients with neurologic involvement. This biologic finding may also provide a discriminating marker for CNS infection in Lyme disease.

L8 ANSWER 19 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 11

AN 1997:387940 BIOSIS

DN PREV199799687143

TI Ceftriaxone compared with doxycycline for the treatment of acute disseminated Lyme disease.

AU Dattwyler, Raymond J. (1); ***Luft, Benjamin J.*** ; Kunkel, Mark J.; Finkel, Michael F.; Wormser, Gary P.; Rush, Thomas J.; Grunwaldt, Edgar; Agger, William A.; Franklin, Michael; Oswald, Donald; Cockey, Louise; Maladorno, Dionigi

CS (1) Dep. Med., State Univ. N.Y. at Stony Brook, Stony Brook, NY 11794-8161 USA

SO New England Journal of Medicine, (1997) Vol. 337, No. 5, pp. 289-294. ISSN: 0028-4793.

DT Article

LA English

AB Background. Localized Lyme disease, manifested by erythema migrans, is usually treated with oral doxycycline or amoxicillin. Whether acute disseminated ***Borrelia*** burgdorferi infection should be treated differently from localized infection is unknown. Methods. We conducted a prospective, open-label, randomized, multicenter study comparing parenteral ceftriaxone (2 g once daily for 14 days) with oral doxycycline (100 mg twice daily for 21 days) in patients with acute disseminated B. burgdorferi infection but without meningitis. The erythema migrans skin lesion was required for study entry, and disseminated disease had to be indicated by either multiple erytheme migrans lesions or objective evidence of organ involvement. Results. Of 140 patients enrolled, 133 had multiple erythema migrans lesions. Both treatments were highly effective. Rates of clinical cure at the last evaluation were similar among the patients treated with ceftriaxone (85 percent) and those treated with doxycycline (88 percent); treatment was considered to have failed in only one patient in each group. Among patients whose infections were cured, 18 of 67 patients in the ceftriaxone group (27 percent) reported one or more residual symptoms at the last follow-up visit, as did 10 of 71 patients in the doxycycline group (14 percent, P gtoreq 0.05). Mild arthralgia was the most common persistent symptom. Both regimens were well tolerated; only four patients (6 percent) in each group withdrew because of adverse events. Conclusions. In patients with acute disseminated Lyme disease but without meningitis, oral doxycycline and parenterally administered ceftriaxone were equally effective in preventing the late manifestations of disease.

L8 ANSWER 20 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1998:120708 BIOSIS
DN PREV199800120708
TI A population genetic study of ***Borrelia*** burgdorferi sensu stricto from eastern Long Island, New York, suggested frequency-dependent selection, gene flow and host adaptation.
AU Qiu, Wei-Gang; Bosler, Edward M.; Campbell, Jason R.; Ugine, Gregory D.; Wang, Ing-Nang; ***Luft, Benjamin J.*** ; Dykhuizen, Daniel E. (1)
CS (1) Dep. Ecol. and Evolution, SUNY at Stony Brook, Stony Brook, NY 11794-5245 USA
SO Hereditas (Lund), (Dec., 1997) Vol. 127, No. 3, pp. 203-216. ISSN: 0018-0661.
DT Article
LA English
AB Eastern Long Island, New York, is one of the major foci of Lyme disease in the United States. As in almost all other parts of North America, Lyme disease in this region is caused by a single genomic species of spirochete, ***Borrelia*** burgdorferi sensu stricto. For three consecutive years, natural populations of Lyme ***Borrelia*** in this region were sampled and studied for gene flow among different locations, changes in population structure over time, and selective forces. The genetic diversity of ***Borrelia*** populations was measured at the outer surface protein A (ospA) locus using Cold Single-Stranded Conformation Polymorphism (Cold SSCP) analysis. The ***Borrelia*** populations were found to be highly polymorphic within any of thirteen local populations. Ewens-Watterson tests of neutrality revealed that the high level of genetic diversity within local ***Borrelia*** populations is maintained by balancing selection. Frequency-dependent selection for the different strains distinguished by the ospA alleles is likely the mechanism of the balancing selection. Allele frequency distributions of ***Borrelia*** populations were homogeneous across the region in any particular year, although different infection rates of local tick (Ixodes scapularis) populations suggested that the ***Borrelia*** populations were at least partially isolated. Since the allele frequency distribution changed over time. while remaining homogeneous over space, the nearly uniform allele frequency distribution across the region cannot be explained by recent geographic expansion from a single population. This uniform distribution across the region thus may be maintained by selection, or by a significant amount of migration or both. The genetic structure of B. burgdorferi sensu stricto also differed between spirochetes infecting nymphal ticks and those infecting adult ticks. Since larval and nymphal ticks have distinctly different host feeding preferences, host adaptation of spirochete populations is implied. This distinction and an animal study using chipmunks suggest that ticks infected by ***Borrelia*** as larvae may have high mortality in the wild. This study represents a genetic analysis of local populations of a bacterial species.

L8 ANSWER 21 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 12
AN 1996:239616 BIOSIS
DN PREV199698787745
TI Azithromycin compared with amoxicillin in the treatment of erythema migrans: A double-blind, randomized, controlled trial.

AU ***Luft, Benjamin J. (1)*** ; Dattwyler, Raymond J.; Johnson, Russell C.; Luger, Steven W.; Bosler, Elizabeth M.; Rahn, Daniel W.; Masters, Edwin J.; Grunwaldt, Edgar; Gadgil, Shrikant D.

CS (1) Dep. Medicine, HSC T-16, State University New York Stony Brook, Stony Brook, NY 11794-8160 USA

SO Annals of Internal Medicine, (1996) Vol. 124, No. 9, pp. 785-791. ISSN: 0003-4819.

DT Article

LA English

AB Objective: To determine whether azithromycin or amoxicillin is more efficacious for the treatment of erythema migrans skin lesions, which are characteristic of Lyme disease. Design: Randomized, double-blind, double-dummy, multicenter study. Acute manifestations and sequelae were assessed using a standardized format. Baseline clinical characteristics and response were correlated with serologic results. Patients were followed for 180 days. Setting: 12 outpatient centers in eight states. Patients: 246 adult patients with erythema migrans lesions at least 5 cm in diameter were enrolled and were stratified by the presence of flu-like symptoms (such as fever, chills, headache, malaise, fatigue, arthralgias, and myalgias) before randomization. Intervention: Oral treatment with either amoxicillin, 500 mg three times daily for 20 days, or azithromycin, 500 mg once daily for 7 days. Patients who received azithromycin also received a dummy placebo so that the dosing schedules were identical. Results: Of 217 evaluable patients, those treated with amoxicillin were significantly more likely than those treated with azithromycin to achieve complete resolution of disease at day 20, the end of therapy (88% compared with 76%; P = 0.024). More azithromycin recipients (16%) than amoxicillin recipients (4%) had relapse (P = 0.005). A partial response at day 20 was highly predictive of relapse (27% of partial responders had relapse compared with 6% of complete responders; P lt 0.001). For patients treated with azithromycin, development of an antibody response increased the possibility of achieving a complete response (81% of seropositive patients achieved a complete response compared with 60% of seronegative patients; P = 0.043). Patients with multiple erythema migrans lesions were more likely than patients with single erythema migrans lesions (P lt 0.001) to have a positive antibody titer at baseline (63% compared with 17% for IgM; 39% compared with 16% for IgG). Fifty-seven percent of patients who had relapse were seronegative at the time of relapse. Conclusions: A 20-day course of amoxicillin was found to be an effective therapeutic regimen for erythema migrans, Most patients were seronegative for ***Borrelia*** burgdorferi at the time of presentation with erythema migrans (65%) and at the time of relapse (57%).

L8 ANSWER 22 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

AN 1996:156539 BIOSIS

DN PREV199698728674

TI Multiple infections of Ixodes scapularis ticks by ***Borrelia*** burgdorferi as revealed by single-strand conformation polymorphism analysis.

AU Guttman, David S.; Wang, Pauline W.; Wang, Ing-Nang; Bosler, Edward M.; ***Luft, Benjamin J.*** ; Dykhuizen, Daniel (1)

CS (1) Dep. Ecol. Evol., SUNY at Stony Brook, Stony Brook, NY 11794 USA

SO Journal of Clinical Microbiology, (1996) Vol. 34, No. 3, pp. 652-656. ISSN: 0095-1137.

DT Article

LA English
AB The genetic heterogeneity of the spirochete ***Borrelia*** burgdorferi within single adult black-legged ticks from Shelter Island, N.Y., was determined by cold, single-strand conformation polymorphism (SSCP) analysis. The central region of the ospA gene of B. burgdorferi from infected ticks was amplified by nested PCR. Amplified product of the correct size was obtained from 20 of 45 ticks (44%). This is the fraction of ticks that is expected to be infected with B. burgdorferi. Four variant classes were determined by SSCP analysis. Eight ticks were infected with a single variant, nine ticks were infected with two variants, two ticks were infected with three variants, and one tick was infected with all four variants. DNA from each variant was sequenced. Five different sequences were found. The sequence of each variant was different from that of another variant by a single base. SSCP analysis could distinguish three of the four single-base changes found in the region.

L8 ANSWER 23 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1996:151522 BIOSIS
DN PREV199698723657
TI Clarithromycin in treatment of early Lyme disease: A pilot study.
AU Dattwyler, Raymond J. (1); Grunwaldt, Edgar; ***Luft, Benjamin J.***
CS (1) Lyme Disease Cent., HSC T-16, Room 040, State Univ. New York Stony Brook, Stony Brook, NY 11794-8161 USA
SO Antimicrobial Agents and Chemotherapy, (1996) Vol. 40, No. 2, pp. 468-469. ISSN: 0066-4804.
DT Article
LA English
AB Forty-one patients with erythema migrans were enrolled in an open-labelled pilot study of oral clarithromycin, 500 mg twice daily for 21 days, for the treatment of early Lyme disease. Immediately posttherapy, pretreatment signs and symptoms resolved among 91% of the 33 evaluable patients. At 6 months, all 28 of the evaluable patients were well. Clarithromycin shows promise as an effective agent for the treatment of early Lyme disease and warrants further study.

L8 ANSWER 24 OF 52 CAPLUS COPYRIGHT 2002 ACS
AN 1995:758781 CAPLUS
DN 123:283622
TI Fusion proteins of antigenic polypeptides of ***Borrelia*** for diagnostic and therapeutic use and their manufacture
IN Dunn, John J.; ***Luft, Benjamin J.***
PA Associated Universities, Inc., USA
SO PCT Int. Appl., 199 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9512676	A1	19950511	WO 1994-US12352	19941027
W: AU, CA, FI, JP, NO				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 6248562	B1	20010619	US 1994-235836	19940429
AU 9481274	A1	19950523	AU 1994-81274	19941027
EP 726955	A1	19960821	EP 1995-900453	19941027

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE
PRAI US 1993-148191 A 19931101
US 1994-235836 A 19940429
WO 1994-US12352 W 19941027
AB Chimeric genes for fusion proteins of at least two antigenic polypeptides from one or more species of ***Borrelia*** are described for manuf. of the antigens for vaccines against ***borreliosis*** . The proteins are also useful as immunodiagnostic reagents. The antigenic peptides may be from the same or different larger proteins and may be from different species. The outer surface protein OspA was purified and antigenic domains mapped with monoclonal antibodies. A immunol. important hypervariable region of OspA was identified. The cloning of genes for a no. of outer surface proteins and their use in the construction of chimeric genes is described.

L8 ANSWER 25 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1996:294814 BIOSIS
DN PREV199699017170
TI Treatment of early Lyme ***borreliosis*** with macrolide antibiotics.
AU ***Luft, Benjamin J.*** ; Bosler, Elizabeth M.
CS State Univ. of New York at Stony Brook, Stony Brook, NY USA
SO Neu, H. C. [Editor]; Young, L. S. [Editor]; Zinner, S. H. [Editor]; Acar, J. F. [Editor]. Infectious Disease and Therapy, (1995) Vol. 18, pp. 141-145. Infectious Disease and Therapy; New macrolides, azalides, and streptogramins in clinical practice.
Publisher: Marcel Dekker, Inc. 270 Madison Avenue, New York, New York 10016, USA.
Meeting Info.: Second International Conference on the Macrolides, Azalides, and Streptogramins Venice, Italy January 1994
ISSN: 1043-2981. ISBN: 0-8247-9311-0.
DT Book; Conference
LA English

L8 ANSWER 26 OF 52 CAPLUS COPYRIGHT 2002 ACS
AN 1995:593643 CAPLUS
TI Identification of an immunologically important hypervariable domin of major outer surface protein A of ***Borrelia*** burgdorferi
AU McGrath, Barbara C.; Dunn, John J.; Gorgone, Gina; Guttman, David; Dykhuizen, Daniel; ***Luft, Benjamin j.***
CS Biology Department, Brookhaven National Laboratory, Upton, NY, 11973, USA
SO Infect. Immun. (1995), 63(6), 2390
CODEN: INFIBR; ISSN: 0019-9567
DT Journal; Errata
LA English
AB Unavailable

L8 ANSWER 27 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 13
AN 1995:221131 BIOSIS
DN PREV199598235431
TI Identification of an immunologically important hypervariable domain of major outer surface protein A of ***Borrelia*** burgdorferi.
AU McGrath, Barbara C.; Dunn, John J.; Gorgone, Gina; ***Luft, Benjamin*** *** J.*** ; Guttman, David; Dykhuizen, Daniel
CS Biol. Dep., Brookhaven Natl. Lab., Upton, NY 11973 USA

SO Infection and Immunity, (1995) Vol. 63, No. 4, pp. 1356-1361.
ISSN: 0019-9567.
DT Article
LA English
AB The gene for the major outer surface protein A (OspA) from several clinically obtained strains of ***Borrelia*** burgdorferi, the cause of Lyme disease, has been cloned, sequenced, and expressed in Escherichia coli by using a T7-based expression system (J. J. Dunn, B. N. Lade, and A. G. Barbour, Protein Expr. Purif. 1:159-168, 1990). All of the OspAs have a single conserved tryptophan at residue 216 or, in some cases, 217; however, the region of the protein flanking the tryptophan is hypervariable, as determined by a moving-window population analysis of ospA from 15 European and North American isolates of B. burgdorferi. Epitope-mapping studies using chemically cleaved OspA and a TrpE-OspA fusion have indicated that this hypervariable region is important for immune recognition. Biophysical analysis, including fluorescence and circular dichroism spectroscopy, have indicated that the conserved tryptophan is buried in a hydrophobic environment. Polar amino acid side chains flanking the tryptophan are likely to be exposed to the hydrophilic solvent. The hypervariability of these solvent-exposed amino acid residues may contribute to the antigenic variation in OspA. To test this, we have performed site-directed mutagenesis to replace some of the potentially exposed amino acid side chains in the B31 protein with the analogous residues of a ***Borrelia*** garinii strain, K48. The altered proteins were then analyzed by Western blot (immunoblot) with monoclonal antibodies which bind OspA on the surface of the intact B31 spirochete. Our results indicate that specific amino acid changes near the tryptophan can abolish the reactivity of OspA to these monoclonal antibodies, which is an important consideration in the design of vaccines based on recombinant OspA.

L8 ANSWER 28 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1996:85799 BIOSIS
DN PREV199698657934
TI Management of Lyme disease.
AU Coyle, Patricia K.; ***Luft, Benjamin J. (1)***
CS (1) Dep. Med., Sch. Med., State Univ. N.Y., Stony Brook, NY 11794 USA
SO Current Opinion in Infectious Diseases, (1995) Vol. 8, No. 6, pp. 444-449.
ISSN: 0951-7375.
DT General Review
LA English

L8 ANSWER 29 OF 52 CAPLUS COPYRIGHT 2002 ACS
AN 1995:912575 CAPLUS
DN 124:20742
TI Treatment of early Lyme ***borreliosis*** with macrolide antibiotics
AU ***Luft, Benjamin J.*** ; Bosler, Elizabeth M.
CS State Univ. of New York, Stony Brook, NY, USA
SO Infect. Dis. Ther. (1995), 18(New Macrolides, Azalides, and Streptogramins in Clinical Practice), 141-5
CODEN: IDTHER; ISSN: 1043-2981
DT Journal; General Review
LA English
AB A review with 14 refs. The authors discuss treatment of Lyme ***borreliosis*** with macrolide antibiotics, as well as pharmacokinetic

data.

L8 ANSWER 30 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 14
AN 1994:270258 BIOSIS
DN PREV199497283258
TI Complete nucleotide sequence of a circular plasmid from the Lyme disease spirochete, ***Borrelia*** burgdorferi.
AU Dunn, John J. (1); Buchstein, Sara R.; Butler, Laura-Li; Fisenne, Stephen; Polin, David S.; Lade, Barbara N.; ***Luft, Benjamin J.***
CS (1) Biol. Dep., Brookhaven Natl. Lab., Upton, NY 11973-5000 USA
SO Journal of Bacteriology, (1994) Vol. 176, No. 9, pp. 2706-2717.
ISSN: 0021-9193.
DT Article
LA English
AB We have determined the complete nucleotide sequence of a small circular plasmid from the spirochete ***Borrelia*** burgdorferi Ip21, the agent of Lyme disease. The plasmid (cp8.3/Ip21) is 8,303 bp long, has a 76.6% A+T content, and is unstable upon passage of cells in vitro. An analysis of the sequence revealed the presence of two nearly perfect copies of a 184-bp inverted repeat sequence separated by 2,675 bp containing three closely spaced, but nonoverlapping, open reading frames (ORFs). Each inverted repeat ends in sequences that may function as signals for the initiation of transcription and translation of flanking plasmid sequences. A unique oligonucleotide probe based on the repeated sequence showed that the DNA between the repeats is present predominantly in a single orientation. Additional copies of the repeat were not detected elsewhere in the Ip21 genome. An analysis for potential ORFs indicates that the plasmid has nine highly probable protein-coding ORFs and one that is less probable; together, they occupy almost 71% of the nucleotide sequence. Analysis of the deduced amino acid sequences of the ORFs revealed one (ORF-9) with features in common with ***Borrelia*** lipoproteins and another (OPF-2) having limited homology with a replication protein, RepC, from a gram-positive plasmid that replicates by a rolling circle (RC) mechanism. Known collectively as RC plasmids, such plasmids require a double-stranded origin at which the Rep protein nicks the DNA to generate a single-stranded replication intermediate. cp8.3/Ip21 has three copies of the heptameric motif characteristically found at a nick site of most RC plasmids. These observations suggest that cp8.3/Ip21 may replicate by an RC mechanism.

L8 ANSWER 31 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 15
AN 1994:391191 BIOSIS
DN PREV199497404191
TI Early and specific antibody response to OspA in Lyme disease.
AU Schutzer, Steven E. (1); Coyle, P. K.; Dunn, John J.; ***Luft, Benjamin*** *** J.*** ; Brunner, Michael
CS (1) UMDNJ New Jersey Med. Sch., Dep. Med., 185 South Orange Ave., Newark, NJ 07103 USA
SO Journal of Clinical Investigation, (1994) Vol. 94, No. 1, pp. 454-457.
ISSN: 0021-9738.
DT Article
LA English
AB ***Borrelia*** burgdorferi (Bb), the cause of Lyme disease, has

appeared not to evoke a detectable specific antibody response in humans until long after infection. This delayed response has been a biologic puzzle and has hampered early diagnosis. Antibody to the abundant organism-specific outer surface proteins, such as the 31-kD OspA, has rarely been detected less than 6 mo after infection. Antibody to a less organism-specific 41-kD flagellin protein. sharing common determinants with other bacteria and thus limiting its diagnostic potential, may appear after 4 to 6 wks. To investigate our hypothesis that specific antibody to OspA may actually be formed early but remain at low levels or bound in immune complexes, we analyzed serum samples from patients with concurrent erythema migrans (EM). This is the earliest sign of Lyme disease and occurs in 60-70% of patients, generally 4-14 d after infection. We used less conventional but more sensitive methods: biotin-avidin Western blots and immune complex dissociation techniques. Antibody specificity was confirmed with recombinant OspA. Specific complexed antibody to whole Bb and recombinant OspA was detected in 10 of 11 of the EM patients compared to 0 of 20 endemic area controls. IgM was the predominant isotype to OspA in these EM patients. Free IgM to OspA was found in half the EM cases. IgM to OspA was also detected in 10 of 10 European patients with EM who also had reactive T cells to recombinant OspA. In conclusion a specific antibody response to OspA occurs early in Lyme disease. This is likely to have diagnostic implications.

L8 ANSWER 32 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 16
AN 1995:126774 BIOSIS
DN PREV199598141074
TI Purification of ***Borrelia*** burgdorferi Outer Surface Protein A (OspA) and Analysis of Antibody Binding Domains.
AU Jiang, Wei; Gorevic, Peter D.; Dattwyler, Raymond J.; Dunn, John J.; ***Luft, Benjamin J. (1)***
CS (1) Dep. Med., State Univ. N.Y. Stony Brook, Stony Brook, NY 11794-8153 USA
SO Clinical and Diagnostic Laboratory Immunology, (1994) Vol. 1, No. 4, pp. 406-412.
ISSN: 1071-412X.
DT Article
LA English
AB The major outer surface protein, OspA, of ***Borrelia*** burgdorferi is a lipoprotein which is of particular interest because of its potential as a vaccine candidate. However, serotypic and genetic analyses of OspA from both European and North American strains have demonstrated antigenic and structural heterogeneities. We purified OspA to homogeneity by exploiting its resistance to trypsin digestion. By treating spirochetes with trypsin and then using Triton X-114 extraction and ion-exchange chromatography, we obtained a yield of 2 mg of pure OspA protein per liter of culture. Intrinsic labeling with (14C)palmitic acid confirmed that OspA was lipidated, and partial digestion established lipidation at the amino-terminal end of the molecule. The reactivity of five anti-OspA murine monoclonal antibodies to nine different isolates of B. burgdorferi was ascertained by Western blot (immunoblot) analysis. Purified OspA was fragmented by enzymatic or chemical cleavage, and the monoclonal antibodies were able to define four distinct immunogenic domains. Further resolution of the epitope specificity to determine humoral and cellular immune responses to OspA has implications for vaccine development and for

the utility of this protein as a reagent in diagnostic testing for Lyme ***borreliosis*** .

L8 ANSWER 33 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1994:18129 BIOSIS
DN PREV199497031129
TI ***Borrelia*** burgdorferi is clonal: Implications for taxonomy and vaccine development.
AU Dykhuizen, Daniel E.; Polin, David S.; Dunn, John J.; Wilske, Bettina; Preac-Mursic, Vera; Dattwyler, Raymond J.; ***Luft, Benjamin J. (1)***
CS (1) Dep. Med., Health Sci. Cent., State Univ. New York, Stony Brook, NY 11794 USA
SO Proceedings of the National Academy of Sciences of the United States of America, (1993) Vol. 90, No. 21, pp. 10163-10167.
ISSN: 0027-8424.
DT Article
LA English
AB The chromosomal genes fla and p93 and the ospA gene from a linear plasmid were sequenced from up to 15 isolates of ***Borrelia*** burgdorferi, which causes Lyme ***borreliosis*** in man. Comparison of the gene trees provides no evidence for genetic exchange between chromosomal genes, suggesting B. burgdorferi is strictly clonal. Comparison of the chromosomal gene trees with that of the plasmid-encoded ospA reveals that plasmid transfer between clones is rare. Evidence for intra-genic recombination was found in only a single ospA allele. The analysis reveals three common clones and a number of rare clones that are so highly divergent that vaccines developed against one are unlikely to provide immunity to organisms from others. Consequently, an understanding of the geographic and genetic variability of B. burgdorferi will prove essential for the development of effective vaccines and programs for control. While the major clones might be regarded as different species, the clonal population structure, the geographic localization, and the widespread incidence of Lyme disease suggest that B. burgdorferi should remain the same for the entire array of organisms.

L8 ANSWER 34 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 17
AN 1993:469442 BIOSIS
DN PREV199345092567
TI Biochemical and biophysical characterization of the major outer surface protein from North American and European isolates of ***Borrelia*** burgdorferi.
AU McGrath, Barbara C. (1); Dunn, John J. (1); France, Louisa L.; Jaing, Wei; Dykhuizen, Daniel; Polin, David; Gorgone, Gina; ***Luft, Benjamin***
CS (1) Biol. Dep., Brookhaven Natl. Lat., Upton, NY 11973
SO Ginsberg, H. S. [Editor]; Brown, F. [Editor]; Chanok, R. M. [Editor]; Lerner, R. A. [Editor]. Vaccines (Cold Spring Harbor), (1993) Vol. 93, pp. 365-370. Vaccines (Cold Spring Harbor); Modern approaches to new vaccines including prevention of AIDS.
Publisher: Cold Spring Harbor Laboratory Press 10 Skyline Drive, Plainview, New York 11803, USA.
Meeting Info.: Tenth Annual Meeting Cold Spring Harbor, New York, USA September 1992
ISSN: 0899-4056. ISBN: 0-87969-383-5.
DT Article

LA English

L8 ANSWER 35 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 18
AN 1993:585907 BIOSIS
DN PREV199497005277
TI Evidence for an alpha-helical epitope on outer surface protein A from the Lyme disease spirochete, ***Borrelia*** burgdorferi: An application of steady-state and time-resolved fluorescence quenching techniques.
AU France, Louisa L. (1); Kieleczawa, Jan; Dunn, John J.; ***Luft, Benjamin*** *** J.*** ; Hind, Geoffrey; Sutherland, John C.
CS (1) Plum Island Animal Disease Cent., USDA/ARS, P.O. Box 848, Greenport, NY 11944 USA
SO Biochimica et Biophysica Acta, (1993) Vol. 1202, No. 2, pp. 287-296. ISSN: 0006-3002.
DT Article
LA English
AB Outer surface protein A (OspA) is a major antigen of ***Borrelia*** burgdorferi, the etiological agent of Lyme disease. A recombinant form of OspA (OspA-257) from B. burgdorferi, strain B31, contains 257 amino acids and a single tryptophan residue at position 216 (Trp-216). Mapping studies indicate that Trp-216 is involved in the epitope for the agglutinating monoclonal antibody 105.5. However, the fluorescence emission maximum of the native protein is 330 nm, indicating that Trp-216 is not solvent-exposed. Primary structure analysis suggests an cv-helical conformation for residues approx. 204-217, which, if located on the protein surface, would allow Trp-216 to be buried, while leaving hydrophilic residues on the opposite side of the helix exposed. This helix would place Lys-212 within approx. 6 ANG of Trp-216; the presence of such a positively-charged residue can, in principle, be ascertained from fluorescence quenching studies. Stern-Volmer plots confirm that Trp-216 is indeed buried in the native protein, but is readily accessible to the small polar quencher, acrylamide. Furthermore, the dominant component of the fluorescence emission shows only weak dynamic quenching by the positively-charged quencher, Cs+, while the minor component undergoes static quenching by I-, indicating the proximity of a positively-charged residue. These data are consistent with the existence of an alpha-helix from residues 204-217 in the predicted orientation at the protein surface, hence indicating the structure of the antigentic determinant.

L8 ANSWER 36 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1993:186784 BIOSIS
DN PREV199395097234
TI An OspA antigen-capture enzyme-linked immunosorbent assay for detecting North American isolates of ***Borrelia*** burgdorferi in larval and nymphal Ixodes dammini.
AU Burkot, Thomas R. (1); Wirtz, Robert A.; ***Luft, Benjamin*** ; Piesman, Joseph
CS (1) Div. Vector-Borne Infectious Diseases, Cent. Disease Control, P.O. Box 2087, Fort Collins, CO 80522
SO Journal of Clinical Microbiology, (1993) Vol. 31, No. 2, pp. 272-278. ISSN: 0095-1137.
DT Article
LA English
AB An antigen-capture enzyme-linked immunosorbent assay (ELISA) was developed

for detecting North American isolates of ***Borrelia*** burgdorferi in larval, nymphal, and adult ticks. The assay uses an anti-OspA monoclonal antibody (H5332) for antigen capture and biotin-labelled polyclonal sera with streptavidin-horseradish peroxidase for signal generation. The assay recognized 15 of 15 North American B. burgdorferi isolates and did not cross-react with spirochete antigens of ***Borrelia*** hermsii, ***Borrelia*** turnicatae, ***Borrelia*** coriaceae, or ***Borrelia*** parkeri, or with tick antigens of Ixodes dammini, Ixodes scapularis, Ixodes pacificus, Ixodes cookei, Ixodes angustus, or Ambylomma americanum. The assay, with a sensitivity of less than 150 spirochetes, can detect infections in larval, nymphal, and adult ticks. In addition to fresh ticks, B. burgdorferi infections in ticks stored frozen, dried, or in 70% ethanol can be determined with the assay.

L8 ANSWER 37 OF 52 CAPLUS COPYRIGHT 2002 ACS
AN 1993:555745 CAPLUS
DN 119:155745
TI Cross-reactive antigenic domains of the flagellin protein of ***Borrelia*** burgdorferi
AU ***Luft, Benjamin J.*** ; Dunn, J. J.; Dattwyler, R. J.; Gorgone, G.; Gorevic, P. D.; Schubach, W. H.
CS Dep. Med., State Univ. New York, Stony Brook, NY, 11794, USA
SO Res. Microbiol. (1993), 144(4), 251-7
CODEN: RMCREW; ISSN: 0923-2508
DT Journal
LA English
AB The p41 flagellin of ***Borrelia*** burgdorferi is the most common antigen recognized by serum of patients with Lyme ***borreliosis*** . This antigen shares amino acid homol., particularly in the amino and carboxy termini, with periflagellar antigens found in other microorganisms including Treponema pallidum. The authors cloned and expressed p41 open reading frame in Escherichia coli and expressed it both as TrpE fusion and full-length unfused proteins. Also, they generated deletion constructs of various portions of the gene. Sera from patients with late Lyme ***borreliosis*** and secondary syphilis were used to identify the recombinant proteins by immunoblot anal. Sera from 26 patients with Lyme ***borreliosis*** , 20 with secondary syphilis and 10 controls were used to identify cross-reactive domains of the B. burgdorferi flagellin. The variable region (amino acids 131-234) of the protein was recognized by 59% (15/26) of patients with late Lyme ***borreliosis*** compared to 30% (6/20) of patients with secondary syphilis and no (0/10) control patients. It appears that cross-reactive epitopes between B. burgdorferi and T. pallidum extend to the variable region of the flagellin.

L8 ANSWER 38 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1993:357501 BIOSIS
DN PREV199345040926
TI Characterization of the p12 protein of ***Borrelia*** burgdorferi.
AU Buchstein, Sara R. (1); McGrath, Barbara C.; Dunn, John J.; ***Luft,*** *** Benjamin***
CS (1) Beth Israel Med. Cent., New York, NY USA
SO Abstracts of the General Meeting of the American Society for Microbiology, (1993) Vol. 93, No. 0, pp. 124.
Meeting Info.: 93rd General Meeting of the American Society for Microbiology Atlanta, Georgia, USA May 16-20, 1993

ISSN: 1060-2011.
DT Conference
LA English

L8 ANSWER 39 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1994:8904 BIOSIS
DN PREV199497021904
TI Epitope mapping of outer surface protein A (Osp) of ***Borrelia***
Burgdorferi (Bb): A candidate protein in vaccine development.
AU Gorevic, Peter D. (1); Dattwyler, Raymond J.; Dunn, John J.; Jiang, Wei;
Gorgone, Gina; ***Luft, Benjamin J.***
CS (1) Brookhaven Natl. Lab., Stony Brook, NY 11794 USA
SO Arthritis and Rheumatism, (1993) Vol. 36, No. 9 SUPPL., pp. S41.
Meeting Info.: 57th Annual Scientific Meeting of the American College of
Rheumatology San Antonio, Texas, USA November 7-11, 1993
ISSN: 0004-3591.
DT Conference
LA English

L8 ANSWER 40 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE
19
AN 1993:50848 BIOSIS
DN PREV199395027150
TI Characterization of a ***Borrelia*** burgdorferi dnaJ homolog.
AU Anzola, John; ***Luft, Benjamin J.*** ; Gorgone, Gina; Peltz, Gary (1)
CS (1) Inst. Immunol. and Biol. Sci., Syntex Res., Palo Alto, Calif. 94303
SO Infection and Immunity, (1992) Vol. 60, No. 11, pp. 4965-4968.
ISSN: 0019-9567.
DT Article
LA English
AB The gene encoding a ***Borrelia*** burgdorferi DnaJ homolog, located
immediately 3' of the hsp70 gene, was characterized. Although there is a
single copy of the dnaJ gene on the spirochetal chromosome, two distinct
dnaJ transcripts are detected in B. burgdoferi RNA. RNA blot analysis
indicated that the dnaJ gene can be transcribed alone or as part of a
larger transcript containing the hsp70 homolog.

L8 ANSWER 41 OF 52 CAPLUS COPYRIGHT 2002 ACS
AN 1993:5207 CAPLUS
DN 118:5207
TI The 93-kilodalton protein of ***Borrelia*** burgdorferi: an
immunodominant protoplasmic cylinder antigen
AU ***Luft, Benjamin J.*** ; Mudri, Sherri; Jiang, Wei; Dattwyler, Raymond
J.; Gorevic, Peter D.; Fischer, Thomas; Munoz, Priscilla; Dunn, John J.;
Schubach, William H.
CS Dep. Med., State Univ. New York, Stony Brook, NY, 11794-8153, USA
SO Infect. Immun. (1992), 60(10), 4309-21
CODEN: INFIBR; ISSN: 0019-9567
DT Journal
LA English
AB Using immunoblots, the authors identified proteins of B. burgdorferi
recognized by sera from patients with either acute or chronic Lyme
disease. In all groups studied, the 41-kDa flagellar protein and a
relatively minor 93-kDa protein (p93) were the most commonly recognized
antigens in patients with acute and chronic disease due to B. burgdorferi.

A murine monoclonal antibody (MAb 181.1) was developed against p93, and the antigen was detected by immunoblot anal. in 4 European and American strains of B. burgdorferi. On 2-dimensional gel electrophoresis, p93 had an apparent pI of 6.8. Immunoelectronmicroscopy with MAb 181.1 demonstrated that p93 is located within the protoplasmic cylinder compartment of the organism. The gene encoding p93 was retrieved from a phage expression library. The derived amino acid sequence of p93 confirmed chem. characterization of the antigen, including its amino-terminal peptide sequence. The derived amino acid sequence predicted it to be predominantly .alpha. helical. A prominent antigenic domain located at the C portion of the protein was recognized by human and rabbit polyclonal antisera and human (MAb D4) and mouse (MAb 181.1) MAbs.

L8 ANSWER 42 OF 52 CAPLUS COPYRIGHT 2002 ACS
AN 1993:668761 CAPLUS
DN 119:268761
TI ***Borrelia*** burgdorferi HSP70 homolog: characterization of an immunoreactive stress protein
AU Anzola, John; ***Luft, Benjamin J.*** ; Gorgone, Gina; Dattwyler, Raymond J.; Soderberg, Carol; Lahesmaa, Riitta; Peltz, Gary
CS Inst. Biol. Sci., Syntex Res., Palo Alto, CA, 94303, USA
SO Infect. Immun. (1992), 60(9), 3704-13
CODEN: INFIBR; ISSN: 0019-9567
DT Journal
LA English
AB The gene encoding an immunoreactive ***Borrelia*** burgdorferi HSP70 homolog was isolated and characterized. The predicted amino acid sequence of this spirochetal protein confirms that this gene encodes a member of the HSP70 family of proteins. Although there appears to be a single copy of this gene on the spirochetal chromosome, two distinct transcripts hybridizing to the hsp70 probe are detected in RNA isolated from B. burgdorferi. The amt. of spirochetal HSP70 RNA transcripts is shown to be thermally regulated. Antibodies in the serum of three Lyme arthritis patients and cloned T-cell lines isolated from one patient with Lyme arthritis recognize the expressed recombinant HSP70, indicating that it is an immunol. important spirochetal antigen. Antibodies in a rabbit antiserum, as well as antibodies in the serum for two of three Lyme arthritis patients examd., bound to expressed truncated recombinant HSP70s with 250 amino acids deleted from either the N- or C-terminus of the protein. However, antibodies in the serum of three Lyme arthritis patients, which were reactive with spirochetal HSP70, did not cross-react with human HSP70 proteins.

L8 ANSWER 43 OF 52 CAPLUS COPYRIGHT 2002 ACS
AN 1992:446175 CAPLUS
DN 117:46175
TI Mapping the major antigenic domains of the native flagellar antigen of ***Borrelia*** burgdorferi
AU Jiang, Wei; ***Luft, Benjamin J.*** ; Schubach, William; Dattwyler, Raymond J.; Gorevic, Peter D.
CS Dep. Med., State Univ. New York, Stony Brook, NY, 11794-8161, USA
SO J. Clin. Microbiol. (1992), 30(6), 1535-40
CODEN: JCMIDW; ISSN: 0095-1137
DT Journal
LA English

AB Purified flagellar protein (p41) of B. burgdorferi (strain B31) was subjected to chem. cleavage with hydroxylamine or proteolysis with V8 protease, endoproteinase Asp-N, or .alpha.-chymotrypsin. The resulting polypeptides were identified by SDS-PAGE, and their positions in the published DNA sequence of the p41 protein were detd. by N-terminal sequencing and amino acid anal. Epitope specificities of antibody binding by a monoclonal antibody raised by immunization of mice with purified flagella and pooled sera from patients with multiple erythema migrans, late Lyme ***borreliosis*** , or secondary syphilis were analyzed by Western blots (immunoblots) of peptides transferred to Immobilon PDVF filters. The major epitope binding one murine monoclonal antibody (158) was localized to a C-terminal domain that includes residues 300-336. The dominant epitopes binding human polyclonal antibodies are in the central portion of the mol. (residues 182-218) that is not conserved compared with other bacterial flagellins. Addnl. reactive epitopes were identified in the N-terminal domain of the protein. Sera from patients with syphilis bound strongly to the N-terminal conserved domain, providing a structural basis for cross-reactivity seen in std. ELISAs, but not to the central part of the mol. Specific and cross-reactive antigenic determinants need to be considered in the design of improved immunodiagnostics for spirochetal diseases.

L8 ANSWER 44 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 20

AN 1993:28533 BIOSIS

DN PREV199395016733

TI Molecular analysis of the outer surface protein A (OspA) of ***Borrelia*** burgdorferi for conserved and variable antibody binding domains.

AU Wilske, Bettina (1); ***Luft, Benjamin*** ; Schubach, William H.; Zumstein, Gitta; Jauris, Sigrid; Preac-Mursic, Vera; Kramer, Michael D.

CS (1) Max Pettenkofer Inst. Hygiene, Medizinische Mikrobiologie, Univ. Muenchen, Pettenkoferstrasse 9a, W-8000 Muenchen 2 Germany

SO Medical Microbiology and Immunology, (1992) Vol. 181, No. 4, pp. 191-207. ISSN: 0300-8584.

DT Article

LA English

AB The outer surface protein A (OspA) of ***Borrelia*** burgdorferi is a major candidate for development of a ***borrelia*** vaccine. However, vaccine development may be aggravated by the immunological heterogeneity of OspA. In this respect the knowledge about conserved and variable epitopes is of major interest. In this study truncated proteins derived from two different OspA serotypes of B. burgdorferi were mapped for conserved and specific antibody-binding domains. The OspA fragments were reacted in the Western blot with eight different OspA-specific monoclonal antibodies recognizing between one and seven of the seven OspA serotypes previously described. The two broadly reacting antibodies (recognizing all serotypes) react with N-terminal fragments of 93 and 214 amino acids, respectively, whereas antibodies recognizing only one and two to four of the seven serotypes are raeactive with C-terminal fragments of amino acid 143-273 and 100-273, respectively. Thus, conserved antibody-binding domains are located nearer to the N terminus than serotype-specific ones. Comparison of the results from western blot mapping with OspA sequence data suggested certain conserved or variable regions as probable candidates for antigenic sites involved in linear or conformationally

dependent epitopes. This, however, needs to be confirmed by epitope mapping using the respective synthetic peptides.

L8 ANSWER 45 OF 52 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1993:19439 BIOSIS
DN PREV199344007639
TI Lyme arthritis, a prospective study on the effect of treatment on the serologic response.
AU Dattwyler, Raymond J. (1); ***Luft, Benjamin J. (1)*** ; Gorevic, Peter D. (1); Dunn, John
CS (1) State Univ. New York, Stony Brook, N.Y. 11794
SO Arthritis & Rheumatism, (1992) Vol. 35, No. 9 SUPPL., pp. S183. Meeting Info.: 56th Annual Scientific Meeting of the American College of Rheumatology, Atlanta, Georgia, USA, October 11-15, 1992. ARTHRITIS RHEUM ISSN: 0004-3591.
DT Conference
LA English

L8 ANSWER 46 OF 52 CAPLUS COPYRIGHT 2002 ACS
AN 1993:206400 CAPLUS
DN 118:206400
TI Analysis and expression of the ***Borrelia*** burgdorferi P/Gau fla gene: identification of heterogeneity with the B31 strain
AU ***Luft, Benjamin J.*** ; Pawagi, Sujata; Jiang, Wei; Fiseene, Steven; Gorevic, Peter D.; Dunn, John
CS Dep. Med., SUNY, Stony Brook, NY, USA
SO FEMS Microbiol. Lett. (1992), 93(1), 63-7
CODEN: FMLED7; ISSN: 0378-1097
DT Journal
LA English
AB The flagellin gene from the P/Gau strain of B. burgdorferi was cloned and sequenced. The translated P/Gau flagellin protein differed from the flagellin of the B31 strain at 13 of 336 amino acids. This includes seven differences between amino acids 190-234, an immunodominant and specific region for B. burgdorferi. The entire flagellin mol., as well as peptides of the internal portion of the protein which is more specific for B. burgdorferi, has been expressed in Escherichia coli using a pET7HIS.2 expression system. These peptides may be of great value for the development of sensitive and specific recombinant-based serol. assays.

L8 ANSWER 47 OF 52 CAPLUS COPYRIGHT 2002 ACS
AN 1991:533561 CAPLUS
DN 115:133561
TI Characterization of an immunoreactive 93-kDa core protein of ***Borrelia*** burgdorferi with a human IgG monoclonal antibody
AU Volkman, David J.; ***Luft, Benjamin J.*** ; Gorevic, Peter D.; Schultz, Josephine; Padovano, Linda
CS Health Sci. Cent., State Univ. New York, Stony Brook, NY, 11794, USA
SO J. Immunol. (1991), 146(9), 3177-82
CODEN: JOIMA3; ISSN: 0022-1767
DT Journal
LA English
AB Lyme ***borreliosis*** is an infectious disease caused by the tick-borne spirochete B. burgdorferi, which carries the potential for chronic infection. Antigens (Ag) on the etiol. ***Borrelia*** are

currently being defined structurally and their ability to elicit immune responses delineated. EBV can be used to immortalize human B. burgdorferi-specific B cells from infected donors and generate antibodies against antigenic epitopes encountered in natural infection. A human mAb secreting EBV-transformed B cell line, D7, has been developed that is specific for a 93-kDa B. burgdorferi protein and has been used to characterize this potentially important Ag. D7 produces an IgG3 antibody that detects the 93-kDa Ag as well as smaller fragments at 46 kDa and lower mol. mass. The antibody detects similar epitopes on all B. burgdorferi isolates tested and on a B. hermsii protein with mol. mass greater than 100 kDa but binds poorly to Treponema species. In contrast, polyclonal sera from Lyme disease patients show little binding to the homologous Ag in B. hermsii. Structurally, the 93-kDa protein is assocd. with the flagellum and may be firmly anchored in the protoplasmic cylinder. It is not solubilized by nonionic detergent treatment of the whole ***Borrelia*** . Antibodies against a comparable m.w. protein are present in sera from patients with both early and late infection. Thus, antibodies against this Ag are a sensitive and specific marker of ***Borrelia*** infection. This Ag is likely of structural importance and may represent a target of host defenses.

L8 ANSWER 48 OF 52 CAPLUS COPYRIGHT 2002 ACS
AN 1991:533548 CAPLUS
DN 115:133548
TI Immunologic and structural characterization of the dominant 66- to 73-kDa antigens of ***Borrelia*** burgdorferi
AU ***Luft, Benjamin J.*** ; Gorevic, Peter D.; Jiang, Wei; Munoz, Priscilla; Dattwyler, Raymond J.
CS Health Sci. Cent., SUNY, Stony Brook, NY, 11794, USA
SO J. Immunol. (1991), 146(8), 2776-82
CODEN: JOIMA3; ISSN: 0022-1767
DT Journal
LA English
AB The 66-73-kDa proteins of B. burgdorferi are dominant immunogens and expressed in all strains of B. burgdorferi. The humoral response to these antigens (Ag) occurs relatively early during the course of infection. Two-dimensional Western blot anal. of this group of Ag revealed them to consist of a tetrad of proteins with apparent mol. mass of 66, 68, 71, and 73 kDa. Furthermore, in this study the authors demonstrate the 66-kDa protein to be a potent inducer of lymphoproliferation in the patient immune to B. burgdorferi. Monospecific polyclonal antibodies and mAb demonstrate that each of these proteins was immunol. distinct. However, direct amino acid sequence of the 66- and 68-kDa Ag was almost identical and had a high level of sequence similarity to the GroEL heat-shock protein (Hsp60) of Escherichia coli and the 60-kDa immunodominant protein of Treponema pallidum. The N-terminal sequence of the 71- and 73-kDa proteins of B. burgdorferi was almost identical and these proteins had remarkable sequence similarity to the DnaK heat-shock protein of E. coli (Hsp70). It appears likely, therefore, that proteins related to the heat-shock family are potent immunogens of B. burgdorferi.

L8 ANSWER 49 OF 52 CAPLUS COPYRIGHT 2002 ACS
AN 1991:447418 CAPLUS
DN 115:47418
TI Mapping antibody-binding domains of the major outer surface membrane

protein (OspA) of ***Borrelia*** burgdorferi
AU Schubach, William H.; Mudri, Sherri; Dattwyler, Raymond J.; ***Luft,*** *** Benjamin J.***
CS Dep. Med., State Univ. New York, Stony Brook, NY, 11794, USA
SO Infect. Immun. (1991), 59(6), 1911-15
CODEN: INFIBR; ISSN: 0019-9567
DT Journal
LA English
AB The major outer surface membrane protein of B. burgdorferi, OspA, is one of several antigens recognized by sera from some patients in the chronic phase of Lyme ***borreliosis*** . The OspA open reading frame was expressed in Escherichia coli and a series of deletion constructs of the gene was generated and expressed as trpE fusion proteins in E. coli. These constructs were used to identify antibody-binding sites of both rabbit antiserum and mouse monoclonal antibodies (MAbs) directed against OspA. All antibodies tested failed to bind to a fusion protein contg. the first 61 amino acids of OspA, suggesting that the N-terminal domain of OspA is unexposed to the cell surface. The binding site for one MAb, 184.1, was identified in a region centered around amino acid 61, while the binding site for MAb 105.5 was identified in a region centered around amino acids 214 to 217. Sera from two patients which were reactive to OspA identified distinct epitopes that lie between those recognized by MAbs.

L8 ANSWER 50 OF 52 CAPLUS COPYRIGHT 2002 ACS
AN 1991:531821 CAPLUS
DN 115:131821
TI Effect of a .beta.-lactamase inhibitor, tazobactam, on growth and penicillin-binding proteins of ***Borrelia*** burgdorferi
AU Urban, Carl; Rahal, James J.; ***Luft, Benjamin***
CS Dep. Med., Booth Mem. Med. Cent., Flushing, NY, 11355, USA
SO FEMS Microbiol. Lett. (1991), 82(1), 113-16
CODEN: FMLED7; ISSN: 0378-1097
DT Journal
LA English
AB The effects of tazobactam, a relatively new .beta.-lactamase inhibitor, were investigated on growth and penicillin-binding proteins (PBPs) of B. burgdorferi. Previous studies demonstrated several proteins capable of binding labeled penicillin in this organism. Of these proteins, 94-kDa and 57-kDa PBPs possessed the highest affinity for penicillin and were assumed to be essential proteins involved in cell-wall synthesis. In these expts., tazobactam was used in competition binding expts. as well as on whole spirochetes. Only the 94-kDa and 57-kDa PBPs were affected by increasing amts. of tazobactam during competition-binding expts. and growth of B. burgdorferi was also inhibited. These results may explain the in vitro activity of .beta.-lactamase inhibitors in general and suggest a utility for these compds. when examing PBPs with hydrolyzing activity and/or organisms with .beta.-lactamases.

L8 ANSWER 51 OF 52 CAPLUS COPYRIGHT 2002 ACS
AN 1990:608004 CAPLUS
DN 113:208004
TI Penicillin-binding proteins in ***Borrelia*** burgdorferi
AU Urban, Carl; Rahal, James J.; Dattwyller, Raymond J.; Gorevic, Peter; ***Luft, Benjamin J.***

CS Dep. Med., Booth Mem. Med. Cent., Flushing, NY, 11355, USA
SO J. Bacteriol. (1990), 172(10), 6139-41
CODEN: JOBAAY; ISSN: 0021-9193
DT Journal
LA English
AB Penicillin-binding proteins were identified in B. burgdorferi membranes. A 94-kilodalton penicillin-binding protein was the first to be labeled with tritiated penicillin and was the first band to disappear in a competition expt. Its binding ability was destroyed when membranes were preboiled. Several of these penicillin-binding proteins comigrated with bands previously identified as surface proteins.

L8 ANSWER 52 OF 52 CAPLUS COPYRIGHT 2002 ACS
AN 1989:613017 CAPLUS
DN 111:213017
TI Biochemical and immunological characterization of the surface proteins of ***Borrelia*** burgdorferi
AU ***Luft, Benjamin J.*** ; Jiang, Wei; Munoz, Priscilla; Dattwyler, Raymond J.; Gorevic, Peter D.
CS Dep. Med., State Univ. New York, Stony Brook, NY, 11794, USA
SO Infect. Immun. (1989), 57(11), 3637-45
CODEN: INFIBR; ISSN: 0019-9567
DT Journal
LA English
AB The immunodominant proteins and glycoproteins of B. burgdorferi were analyzed by one-dimensional (1D) and 2D gel electrophoresis. More than 100 polypeptide species could be detected on silver-stained 2D gels. Sepn. of sonic exts. of the organism by differential centrifugation (100,000 .times. g) revealed that several of the major proteins are found predominantly within the pellet fraction. The antigenicity of the individual polypeptides was detd. by Western (immuno-) blot anal. with sera from humans with chronic Lyme disease and from rabbits immunized with B. burgdorferi. Surface proteins of viable B. burgdorferi labeled with 125I or long-arm hydroxysuccinimide biotin were identified by gel analyses. Thirteen major surface proteins were apparent, including the highly immunogenic 41-kilodalton (kDa) endoflagellar antigen. Two of these proteins, with mol. masses of 22 and 41 kDa, were further characterized by electroblotting and microsequencing their N-termini. Significant (35%) homol. between the first 20 amino acids of the 22-kDa protein and the deduced amino acid sequence of the 31-kDa (outer surface protein A) protein of B. burgdorferi may indicate that these proteins are processed similarly or are part of a gene family expressed at the surface of the organism. Highly significant (88%) homol. was found between the first nine amino acids of the 41-kDa protein of B. burgdorferi and the 33-kDa endoflagellar protein of Treponema pallidum, after which the sequences diverge. This observation provides in part a structural basis for the obsd. cross-reactivity between the two organisms and suggests alternate approaches to the development of specific immunodiagnostics.

=> e gomes solecki maria/au
E1 2 GOMES SOLECKI M J/AU
E2 11 GOMES SOLECKI M J C/AU
E3 1 --> GOMES SOLECKI MARIA/AU
E4 5 GOMES SOLECKI MARIA J C/AU

E5 5 GOMES SOSIGENAS T A/AU
E6 2 GOMES SPANJAARD C/AU
E7 1 GOMES SUELY/AU
E8 15 GOMES SUELY L/AU
E9 42 GOMES SUELY LOPES/AU
E10 1 GOMES SULEY L/AU
E11 3 GOMES SUSANA/AU
E12 1 GOMES SUZANA M F/AU

=> s e1-e4 and borreli?
L9 19 ("GOMES SOLECKI M J"/AU OR "GOMES SOLECKI M J C"/AU OR "GOMES SOLECKI MARIA"/AU OR "GOMES SOLECKI MARIA J C"/AU) AND BORRELI?

=> dup rem l9
PROCESSING COMPLETED FOR L9
L10 6 DUP REM L9 (13 DUPLICATES REMOVED)

=> d bib ab 1-
YOU HAVE REQUESTED DATA FROM 6 ANSWERS - CONTINUE? Y/(N):y

L10 ANSWER 1 OF 6 CABA COPYRIGHT 2002 CABI DUPLICATE 1
AN 2002:54808 CABA
DN 20023017950
TI Recombinant assay for serodiagnosis of Lyme disease regardless of OspA vaccination status
AU ***Gomes-Solecki, M. J. C.*** ; Wormser, G. P.; Schriefer, M.; Neuman, G.; Hannafey, L.; Glass, J. D.; Dattwyler, R. J.
CS Brook Biotechnologies, Inc., Stony Brook, NY 11790-3350, USA.
SO Journal of Clinical Microbiology, (2002) Vol. 40, No. 1, pp. 193-197. 25 ref.
ISSN: 0095-1137
DT Journal
LA English
AB All current seroassays using cultured ***Borrelia*** burgdorferi as their antigen source have been rendered obsolete by the recombinant OspA Lyme disease vaccine. OspA is the major outer surface protein expressed in cultured B. burgdorferi, and any seroassay that uses whole organisms as its antigen source cannot differentiate between subjects who received the vaccine and those who were naturally infected. We developed a new sensitive and specific ELISA utilizing recombinant chimaeric ***borrelia*** proteins devoid of OspA (rNon-OspA) that can be used to detect antibodies to diagnostically important B. burgdorferi antigens in both OspA-vaccinated and nonvaccinated individuals. We tested sera from patients with Lyme disease and with conditions associated with false-positive serologies, OspA-vaccinated individuals, and healthy high-risk workers from an area of endemicity and normal sera from individuals from areas of nonendemicity. The rNon-OspA test was compared with two commercially available whole-cell immunoassays [USA; date not given]. The rNon-OspA assay is as sensitive and specific as the whole-cell assay ($P>0.05$) for detection of anti-B. burgdorferi antibodies. However, the rNon-OspA assay can differentiate between populations comprised of naturally infected and OspA-vaccinated individuals ($P<0.05$). Our data demonstrate that this new sensitive rNon-OspA ELISA can be used for the laboratory detection of B. burgdorferi antibodies regardless of

vaccination status and could replace existing serological assays for Lyme disease.

L10 ANSWER 2 OF 6 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 2
AN 2001:467352 BIOSIS
DN PREV200100467352
TI A first-tier rapid assay for the serodiagnosis of ***Borrelia*** burgdorferi infection.
AU ***Gomes-Solecki, Maria J. C.*** ; Wormser, Gary P.; Persing, David H.; Berger, Bernard W.; Glass, John D.; Yang, Xiaohua; Dattwyler, Raymond J. (1)
CS (1) Department of Medicine, State University of New York at Stony Brook, Stony Brook, NY, 11794-8161: RAYD@epo.som.sunnysb.edu USA
SO Archives of Internal Medicine, (September 10, 2001) Vol. 161, No. 16, pp. 2015-2020. print.
ISSN: 0003-9926.
DT Article
LA English
SL English
AB Background: The present recommendation for the serologic diagnosis of Lyme disease is a 2-tier process in which a serum sample with a positive or equivocal result by an enzyme-linked immunosorbent assay (ELISA) or immunofluorescent assay is then followed by supplemental testing by Western blot. Our laboratory has developed recombinant chimeric proteins composed of key ***Borrelia*** epitopes. These novel antigens are consistent and are easily standardized. Methods: We adapted these recombinant proteins into a new immunochromatographic format that can be used as a highly sensitive and specific first-tier assay that can be used to replace the ELISA or immunofluorescent assay. Results: This rapid test was equally sensitive (P>.05) and more specific (P<.05) than a frequently used commercial whole cell ELISA. The overall clinical accuracy achieved on agreement studies among 3 Lyme research laboratories on clinically defined serum panels was shown to be statistically equivalent to the commercial ELISA. The assay can detect anti- ***Borrelia*** burgdorferi antibodies in either serum or whole blood. Conclusion: This sensitive and specific rapid assay, which is suited for the physician's office, streamlines the 2-tier system by allowing the physician to determine if a Western blot is necessary at the time of the initial office visit.

L10 ANSWER 3 OF 6 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
AN 2001406737 EMBASE
TI A first-tier rapid assay for the serodiagnosis of ***borrelia*** burgdorferi infection.
AU ***Gomes-Solecki M.J.C.*** ; Wormser G.P.; Persing D.H.; Berger B.W.; Glass J.D.; Yang X.; Dattwyler R.J.
CS Dr. R.J. Dattwyler, Department of Medicine, State University of New York, Stony Brook, NY 11794-8161, United States. RAYD@epo.som.sunnysb.edu
SO Archives of Internal Medicine, (26 Nov 2001) 161/21 (2015-2020).
Refs: 23
ISSN: 0003-9926 CODEN: AIMDAP
CY United States
DT Journal; Article
FS 004 Microbiology
006 Internal Medicine
LA English

SL English

AB Background: The present recommendation for the serologic diagnosis of Lyme disease is a 2-tier process in which a serum sample with a positive or equivocal result by an enzyme-linked immunosorbent assay (ELISA) or immunofluorescent assay is then followed by supplemental testing by Western blot. Our laboratory has developed recombinant chimeric proteins composed of key ***Borrelia*** epitopes. These novel antigens are consistent and are easily standardized. Methods: We adapted these recombinant proteins into a new immunochromatographic format that can be used as a highly sensitive and specific first-tier assay that can be used to replace the ELISA or immunofluorescent assay. Results: This rapid test was equally sensitive (P>.05) and more specific (P<.05) than a frequently used commercial whole cell ELISA. The overall clinical accuracy achieved on agreement studies among 3 Lyme research laboratories on clinically defined serum panels was shown to be statistically equivalent to the commercial ELISA. The assay can detect anti- ***Borrelia*** burgdorferi antibodies in either serum or whole blood. Conclusion: This sensitive and specific rapid assay, which is suited for the physician's office, streamlines the 2-tier system by allowing the physician to determine if a Western blot is necessary at the time of the initial office visit.

L10 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2002 ACS

AN 2000:911434 CAPLUS

DN 134:67201

TI ***Borrelia*** burgdorferi and B. afzelii gene ospC fusion proteins, their sequences, and use as immunogenic compositions for immunizing animals against Lyme disease

IN Dattwyler, Raymond J.; Seinost, Gerald; Dykhuizen, Daniel; Luft, Benjamin J.; ***Gomes-solecki, Maria***

PA Research Foundation of State University of New York, USA; Brook Biotechnologies, Inc.

SO PCT Int. Appl., 160 pp.
CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000078966	A1	20001228	WO 2000-US16915	20000619

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI US 1999-140042P P 19990618

AB The invention provides numerous gene ospC proteins, or immunogenic fragment thereof, from Lyme disease causing ***Borrelia*** , such as B. burgdorferi (families A, B, I and K) or B. afzelii (families A and B). The invention also provides numerous chimeric proteins contg. at least two of the said OspC proteins from B. burgdorferi (families A, B, I and K) or B. afzelii (families A and B). The invention further provides nucleic

acid mols. encoding said chimeric OspC proteins. Still further, the invention provides the for the use of said OspC fusion proteins as immunogenic compns., which can act as vaccines to immunize animals against Lyme disease. Finally, the invention provides: (1) a method for detecting an immune response to Lyme disease which utilizes the chimeric OspC proteins and (2) the nucleic acid sequences, as well as the amino acid sequences, of the ***Borrelia*** chimeric OspC proteins. The invention relates that: (1) B. burgdorferi family A strains contain gene ospC allele OC1; (2) B. burgdorferi family B strains contain gene ospC alleles OC2 and OC3; (3) B. burgdorferi family I strains contain gene ospC allele OC10 and (4) B. burgdorferi family K strains contain gene ospC alleles OC12 and OC13. In the example section, the invention showed the results of immunizing mice with the various OspC chimeric proteins.

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 5 OF 6 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 3
AN 2000:359172 BIOSIS
DN PREV200000359172
TI Recombinant chimeric ***borrelia*** proteins for diagnosis of Lyme disease.
AU ***Gomes-Solecki, Maria J. C.*** ; Dunn, John J.; Luft, Benjamin J.; Castillo, Jonathan; Dykhuizen, Daniel E.; Yang, Xiaohua; Glass, John D.; Dattwyler, Raymond J. (1)
CS (1) Department of Medicine, State University of New York at Stony Brook, Stony Brook, NY, 11794-8161 USA
SO Journal of Clinical Microbiology, (July, 2000) Vol. 38, No. 7, pp. 2530-2535. print.
ISSN: 0095-1137.
DT Article
LA English
SL English
AB Current serologic Lyme disease tests use whole ***borrelia*** cells as the source of antigen. These assays are difficult to standardize and to optimize for sensitivity and specificity. To help solve these problems, we constructed a library of recombinant chimeric proteins composed of portions of key antigens of ***Borrelia*** burgdorferi. These proteins were then used to develop an enzyme-linked immunosorbent assay. We compared our assay with the most sensitive of three whole-cell ***borrelia*** assays. We found that the recombinant assay could detect antibodies significantly better from early Lyme disease sera ($P < 0.05$), and had the same sensitivity for late Lyme disease sera, as the most sensitive whole-cell ***borrelia*** assay. On potentially cross-reactive sera, the recombinant assay was more specific, but not significantly so, than the best whole-cell ***borrelia*** assay. Optimization of the recombinant assay offers the potential for a significant improvement in both sensitivity and specificity.

L10 ANSWER 6 OF 6 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 2000:390707 BIOSIS
DN PREV200000390707
TI A rapid 1st tier recombinant assay for the serodiagnosis of Lyme disease.
AU Neuman, R. G. (1); ***Gomes-Solecki, M. J. C.*** ; Glass, J. D.; Berger, B. W.; Dattwyler, R. J.
CS (1) Wampole Laboratories, Cranbury, NJ USA

SO Abstracts of the General Meeting of the American Society for Microbiology, (2000) Vol. 100, pp. 273. print.
Meeting Info.: 100th General Meeting of the American Society for Microbiology Los Angeles, California, USA May 21-25, 2000 American Society for Microbiology
. ISSN: 1060-2011.
DT Conference
LA English
SL English

=> s ospc and borreli?
L11 1152 OSPC AND BORRELI?

=> dup rem l11
PROCESSING IS APPROXIMATELY 96% COMPLETE FOR L11
PROCESSING COMPLETED FOR L11
L12 329 DUP REM L11 (823 DUPLICATES REMOVED)

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L13 2 L12 AND (OSPC FAMIL?)

=> s l12 and (ospc(4w)famil?)
L14 7 L12 AND (OSPC(4W) FAMIL?)

=> d bib ab 1-
YOU HAVE REQUESTED DATA FROM 7 ANSWERS - CONTINUE? Y/(N):y

L14 ANSWER 1 OF 7 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 2001:283547 BIOSIS
DN PREV200100283547
TI Structural conservation of neurotropism-associated VspA within the variable ***Borrelia*** Vsp- ***OspC*** lipoprotein ***family***
AU Zuckert, Wolfram R. (1); Kerentseva, Tatiana A.; Lawson, Catherine L.; Barbour, Alan G. (1)
CS (1) Departments of Microbiology and Molecular Genetics and Medicine, College of Medicine, University of California at Irvine, Irvine, CA, 92697: wzuecker@uci.edu, abarbour@uci.edu USA
SO Journal of Biological Chemistry, (January 5, 2001) Vol. 276, No. 1, pp. 457-463. print.
ISSN: 0021-9258.
DT Article
LA English
SL English
AB Vsp surface lipoproteins are serotype-defining antigens of relapsing fever spirochetes that undergo multiphasic antigenic variation to avoid the immune response. One of these proteins, VspA of ***Borrelia*** turicatae, is also associated with neurotropism in infected mice. Vsp proteins are highly polymorphic in sequence, which may relate to their specific antibody reactivities and host cell interactions. To determine whether sequence variations affect protein structure, we compared B. turicatae VspA with three related proteins: VspB of B. turicatae, Vsp26 of the relapsing fever agent ***Borrelia*** hermsii, and ***OspC***

of the Lyme disease spirochete ***Borrelia*** burgdorferi. Recombinant non-lipidated proteins were purified by affinity or ion exchange chromatography. Circular dichroism spectra revealed similar, highly alpha-helical secondary structures for all four proteins. In vitro assays demonstrated protease-resistant, thermostable Vsp cores starting at a conserved serine at position 34 (Ser34). All proteins aggregate as dimers in solution. In situ trypsin treatment and surface protein cross-linking showed that the native lipoproteins also form protease-resistant dimers. These findings indicate that Vsp proteins have a common compact fold and that their established functions are based on localized polymorphisms. Two forms of VspA crystals suitable for structure determination by x-ray diffraction methods have been obtained.

L14 ANSWER 2 OF 7 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 2000:345553 BIOSIS
DN PREV200000345553
TI Structural analysis of the ***Borrelia*** Vsp- ***OspC*** protein ***family*** and crystallization of ***Borrelia*** turicatae VspA.
AU Zuckert, W. R. (1); Kerentseva, T. (1); Sayano, N. J. (1); Lawson, C. L.; Barbour, A. G. (1)
CS (1) Univ. of California, Irvine, CA USA
SO Abstracts of the General Meeting of the American Society for Microbiology, (2000) Vol. 100, pp. 50-51. print.
Meeting Info.: 100th General Meeting of the American Society for Microbiology Los Angeles, California, USA May 21-25, 2000 American Society for Microbiology
. ISSN: 1060-2011.
DT Conference
LA English
SL English

L14 ANSWER 3 OF 7 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1999:442408 BIOSIS
DN PREV199900442408
TI Characterization of VspB of ***Borrelia*** turicatae, a major outer membrane protein expressed in blood and tissues of mice.
AU Pennington, Pamela M.; Cadavid, Diego; Barbour, Alan G. (1)
CS (1) Department of Microbiology and Molecular Genetics, B240 Med Sci I, University of California-Irvine, Irvine, CA, 92697-4025 USA
SO Infection and Immunity, (Sept., 1999) Vol. 67, No. 9, pp. 4637-4645. ISSN: 0019-9567.
DT Article
LA English
SL English
AB Serotypes A and B of the relapsing fever spirochete ***Borrelia*** turicatae produce different disease manifestations in infected mice. Whereas serotype B causes more severe arthritis and reaches higher densities in the blood of mice than serotype A, serotype A invades the central nervous system earlier than serotype B during infection. These differences between serotypes A and B in mice are associated with the expression of different surface proteins, VspA and VspB, respectively, in the culture medium. To determine whether these proteins, in particular, VspB, are also expressed in vivo, scid mice infected with B. turicatae were studied. The expression of VspB by spirochetes in the blood was demonstrated in Coomassie blue-stained polyacrylamide gels and Western

blots with a specific monoclonal antibody. Indirect immunofluorescence and immunoperoxidase studies confirmed the expression of VspB in the blood and also demonstrated VspB expression in the joints and heart. The gene for VspB wasnext identified and cloned by using partial amino acid sequencing, reverse transcriptase PCR, and a specific monoclonal antibody. The vspB gene encodes a protein of 216 amino acids that is 68% identical to VspA of B. turicatae and 44 to 56% identical to representative Vsp and ***OspC*** lipoproteins of other ***Borrelia*** spp. The processed VspB protein was distinguished from 26 other Vsp and ***OspC*** proteins by a high predicted isoelectric point at 9.39. The promoter region for vspB was similar to the promoter region for the vsp33 gene of ***Borrelia*** hermsii and for the ***ospC*** gene of ***Borrelia*** burgdorferi, two genes known to be environmentally regulated. These studies established that the virulence-associated VspB protein is expressed by spirochetes in the mouse and that VspB is a novel member of the Vsp- ***OspC*** ***family*** of proteins.

L14 ANSWER 4 OF 7 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1997:391165 BIOSIS
DN PREV199799690368
TI Immunologic and genetic analyses of VmpA of a neurotropic strain of ***Borrelia*** turicatae.
AU Cadavid, Diego; Pennington, Pamela M.; Kerentseva, Tatiana A.; Bergstrom, Sven; Barbour, Alan G. (1)
CS (1) Dep. Microbiol. Molecular Genetics, Univ. California Irvine, Irvine, CA 92697-4025 USA
SO Infection and Immunity, (1997) Vol. 65, No. 8, pp. 3352-3360. ISSN: 0019-9567.
DT Article
LA English
AB In mice infected with serotype A but not serotype B of the relapsing fever spirochete ***Borrelia*** turicatae, early invasion of the brain occurs. Serotypes A and B are further distinguished by the abundant surface protein they produce: VmpA and VmpB, respectively. Western blotting with monoclonal antibodies, one-dimensional peptide mapping, and partial amino acid sequencing demonstrated regions of the VmpA protein that differed from VmpB. Oligonucleotide primers based on the partial amino acid sequences of unique regions were used to amplify a portion of the VmpA gene (vmpA) by PCR, and the product was used as a probe in Southern blot and Northern blot analyses. These experiments showed that (i) expression of the vmpA sequence was determined at the level of transcription and (ii) the vmpA sequence was in two locations in serotype A and one location in serotype B. The vmpA gene at the expression-linked locus of serotype A was cloned and sequenced. An open reading frame would encode a polypeptide of 214 amino acids. The polypeptide expressed by Escherichia coli was bound by VmA-specific but not VmpB-specific antibody. Primer extension analysis identified a consensus sigma-70-type promoter for vmpA at the expression locus. Phylogenetic analysis revealed that VmpA is homologous to small Vmp (Vsp) proteins of B. hermsii and to ***OspC*** proteins of B. burgdorferi. These findings indicate that a function of the Vsp- ***OspC*** ***family*** of proteins of ***Borrelia*** spp. may be differential localization in organs, including the brain, during infection.

L14 ANSWER 5 OF 7 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

AN 1994:357938 BIOSIS
DN PREV199497370938
TI Homology between ***Borrelia*** burgdorferi ***OspC*** and members of the ***family*** of ***Borrelia*** hermsii variable major proteins.
AU Margolis, Neil; Hogan, Daniel; Cieplak., Witold, Jr.; Schwan, Tom G.; Rosa, Patricia A. (1)
CS (1) Lab. Microbial Structure and Function, Rocky Mountain Lab., Natl. Inst. Health, Natl. Inst. Allergy and Infectious Dis., Hamilton, MT 59840 USA
SO Gene (Amsterdam), (1994) Vol. 143, No. 1, pp. 105-110. ISSN: 0378-1119.
DT Article
LA English
AB Synthesis of the ***Borrelia*** burgdorferi outer surface protein C (***OspC***) is quite variable. We have cloned and sequenced the ***ospC*** gene from B. burgdorferi isolate CA-11.2A, a clone in which ***ospC*** expression varies. The 5' flanking region of the gene contains at least two consensus promoter regions, as well as two large overlapping inverted repeats. Sequence comparison to other ***OspC*** proteins indicated that the CA-11.2A ***OspC*** is as closely related to ***OspC*** from two different genospecies of Lyme disease spirochetes as it is to ***OspC*** from the prototype B. burgdorferi strain, B31. Comparisons of the ***OspC*** amino acid (aa) sequence with those in aa sequence databases revealed partial identity with the variable major proteins Vmp3 and Vmp24 of B. hermsii, a causative agent of tick-borne relapsing fever. An ***ospC*** probe hybridized to B. hermsii restriction fragments and linear plasmids that also were recognized by the vmp3 and vmp24 probes. ***OspC*** and these Vmp appear to be related, but their synthesis is regulated differently in the two species of spirochetes. This represents a fascinating example of the evolution of the number, position, regulation and perhaps function of homologous genes in two related pathogens. These parameters may relate to characteristic properties of the pathogens and their separate tick vectors.

L14 ANSWER 6 OF 7 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1994:345519 BIOSIS
DN PREV199497358519
TI A family of surface-exposed proteins of 20 kilodaltons in the genus ***Borrelia*** .
AU Carter, Carol J.; Bergstrom, Sven; Norris, Steven J.; Barbour, Alan G. (1)
CS (1) Dep. Microbiol. and Med., Univ. Texas Health Sci. Cent., San Antonio, TX 78284-7758 USA
SO Infection and Immunity, (1994) Vol. 62, No. 7, pp. 2792-2799. ISSN: 0019-9567.
DT Article
LA English
AB Relapsing fever and Lyme disease spirochetes of the genus ***Borrelia*** display at their surfaces abundant lipoproteins: Vmp proteins in ***Borrelia*** hermsii and Osp proteins in ***Borrelia*** burgdorferi. Vmp and Osp proteins largely determine serotype specificity, and neutralizing antibodies of infected or immunized animals are directed at them. For the present study, we examined B. hermsii serotype 33, which is unique among strain HS1 serotypes in the low frequency of switches to

other serotypes during infections and in vitro cultivation. Failing to clone the complete vmp33 gene, we accomplished its further characterization by (i) determining three partial amino acid sequences, (ii) designing oligonucleotide primers based on these amino acid sequences, (iii) cloning and sequencing the central portion of vmp33, and (iv) using outwardly directed primers and the inverse PCR to clone the 5' and 3' ends of the gene and flanking regions. The transcriptional start site was identified by primer extension analysis. Vmp33 was a polypeptide of 211 amino acids; the three partial amino acid sequences were identified in the open reading frame. Vmp33 was found to be more similar to other 20-kDa Vmp proteins of B. hermsii and to ***OspC*** proteins of B. burgdorferi than t was to 35- to 39-kDa Vmp proteins of the same strain. Moreover, ***OspC*** proteins were more similar to Vmp33 than they were to OspA, -B, or -D proteins of B. burgdorferi. These sequence similarities were consistent with Western blot (immunoblot) findings of crossreactions between Vmp33 and ***OspC*** with anti-Vmp33 and anti-***OspC*** sera. The promoter for the expressed vmp33 gene was found to be different from the expression site for other active vmp genes characterized to date. These results indicate that Vmp33 and other small Vmp's belong with ***OspC*** to a genus-wide ***family*** of 20-kDa proteins and that expression of these proteins may be coordinated with expression of other Vmp and Osp proteins in ***Borrelia*** spp.

L14 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2002 ACS
AN 2000:911434 CAPLUS
DN 134:67201
TI ***Borrelia*** burgdorferi and B. afzelii gene ***ospC*** fusion proteins, their sequences, and use as immunogenic compositions for immunizing animals against Lyme disease
IN Dattwyler, Raymond J.; Seinost, Gerald; Dykhuizen, Daniel; Luft, Benjamin J.; Gomes-solecki, Maria
PA Research Foundation of State University of New York, USA; Brook Biotechnologies, Inc.
SO PCT Int. Appl., 160 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000078966	A1	20001228	WO 2000-US16915	20000619

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI US 1999-140042P P 19990618
AB The invention provides numerous gene ***ospC*** proteins, or immunogenic fragment thereof, from Lyme disease causing ***Borrelia*** , such as B. burgdorferi (families A, B, I and K) or B. afzelii (families A and B). The invention also provides numerous chimeric proteins contg.

at least two of the said ***OspC*** proteins from B. burgdorferi (***families*** A, B, I and K) or B. afzelii (families A and B). The invention further provides nucleic acid mols. encoding said chimeric ***OspC*** proteins. Still further, the invention provides the for the use of said ***OspC*** fusion proteins as immunogenic compns., which can act as vaccines to immunize animals against Lyme disease. Finally, the invention provides: (1) a method for detecting an immune response to Lyme disease which utilizes the chimeric ***OspC*** proteins and (2) the nucleic acid sequences, as well as the amino acid sequences, of the ***Borrelia*** chimeric ***OspC*** proteins. The invention relates that: (1) B. burgdorferi family A strains contain gene ***ospC*** allele OC1; (2) B. burgdorferi family B strains contain gene ***ospC*** alleles OC2 and OC3; (3) B. burgdorferi family I strains contain gene ***ospC*** allele OC10 and (4) B. burgdorferi family K strains contain gene ***ospC*** alleles OC12 and OC13. In the example section, the invention showed the results of immunizing mice with the various ***OspC*** chimeric proteins.
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> s l12 and afzelii
L15 86 L12 AND AFZELII

=> s l12 and (chimeric ospc)
L16 2 L12 AND (CHIMERIC OSPC)

=> d bib ab 1-
YOU HAVE REQUESTED DATA FROM 2 ANSWERS - CONTINUE? Y/(N):y

L16 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2002 ACS
AN 2002:157827 CAPLUS
TI ***Chimeric*** ***OspC*** -OspA proteins of ***Borrelia*** burgdorferi as vaccines and immunodiagnostics for Lyme disease
IN Luft, Benjamin J.; Dunn, John J.
PA Research Foundation of the State University of New York, USA; Brookhaven Sciences Associates, Llc
SO PCT Int. Appl., 277 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2002016422	A2	20020228	WO 2001-US24736	20010807

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2000-226484P P 20000818
US 2000-666017 A2 20000919

AB Novel chimeric nucleic acids, encoding chimeric ***Borrelia*** proteins comprising ***OspC*** or an antigenic fragment thereof and OspA or an antigenic fragment thereof, are disclosed. Chimeric proteins encoded by the nucleic acid sequences are also disclosed. The chimeric proteins are useful as vaccine immunogens against Lyme ***borreliosis*** , as well as for immunodiagnostic reagents.

L16 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2002 ACS
AN 2000:911434 CAPLUS
DN 134:67201
TI ***Borrelia*** burgdorferi and B. afzelii gene ***ospC*** fusion proteins, their sequences, and use as immunogenic compositions for immunizing animals against Lyme disease
IN Dattwyler, Raymond J.; Seinost, Gerald; Dykhuizen, Daniel; Luft, Benjamin J.; Gomes-solecki, Maria
PA Research Foundation of State University of New York, USA; Brook Biotechnologies, Inc.
SO PCT Int. Appl., 160 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000078966	A1	20001228	WO 2000-US16915	20000619

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI US 1999-140042P P 19990618

AB The invention provides numerous gene ***ospC*** proteins, or immunogenic fragment thereof, from Lyme disease causing ***Borrelia*** , such as B. burgdorferi (families A, B, I and K) or B. afzelii (families A and B). The invention also provides numerous chimeric proteins contg. at least two of the said ***OspC*** proteins from B. burgdorferi (families A, B, I and K) or B. afzelii (families A and B). The invention further provides nucleic acid mols. encoding said ***chimeric*** ***OspC*** proteins. Still further, the invention provides the for the use of said ***OspC*** fusion proteins as immunogenic compns., which can act as vaccines to immunize animals against Lyme disease. Finally, the invention provides: (1) a method for detecting an immune response to Lyme disease which utilizes the ***chimeric*** ***OspC*** proteins and (2) the nucleic acid sequences, as well as the amino acid sequences, of the ***Borrelia*** ***chimeric*** ***OspC*** proteins. The invention relates that: (1) B. burgdorferi family A strains contain gene ***ospC*** allele OC1; (2) B. burgdorferi family B strains contain gene ***ospC*** alleles OC2 and OC3; (3) B. burgdorferi family I strains contain gene ***ospC*** allele OC10 and (4) B. burgdorferi family K

strains contain gene ***ospC*** alleles OC12 and OC13. In the example section, the invention showed the results of immunizing mice with the various ***OspC*** chimeric proteins.
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> s l12 and (recombinant ospc)
L17 17 L12 AND (RECOMBINANT OSPC)

=> d bib ab 1-
YOU HAVE REQUESTED DATA FROM 17 ANSWERS - CONTINUE? Y/(N):y

L17 ANSWER 1 OF 17 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 2001:337087 BIOSIS
DN PREV200100337087
TI Interleukin-6 enhances production of anti- ***OspC*** immunoglobulin G2b ***borreliacidal*** antibody.
AU Remington, Monica C.; Munson, Erik L.; Callister, Steven M.; Molitor, Melanie L.; Christopherson, John A.; DeCoster, David J.; Lovrich, Steven D.; Schell, Ronald F. (1)
CS (1) Wisconsin State Laboratory of Hygiene, University of Wisconsin, 465 Henry Mall, Madison, WI, 53706: RFSchell@Facstaff.wisc.edu USA
SO Infection and Immunity, (July, 2001) Vol. 69, No. 7, pp. 4268-4275. print. ISSN: 0019-9567.
DT Article
LA English
SL English
AB Protection against infection with ***Borrelia*** burgdorferi is dependent primarily on induction of complement-dependent antibody that can kill the spirochete. Measuring the production of sustained high levels of ***borreliacidal*** antibody is thus paramount for determining potential vaccine efficacy. We investigated the ***borreliacidal*** antibody response in sera and the amount of antibody produced by cultured lymph node cells of C3H/HeJ mice vaccinated with outer surface protein C (***OspC***). We showed that ***recombinant*** ***OspC*** was a weak stimulant of ***borreliacidal*** antibody production compared to whole cells of ***OspC*** -expressing B. burgdorferi. Mice vaccinated with B. burgdorferi in adjuvant produced a high level (titer, 5,120) of anti- ***OspC*** ***borreliacidal*** antibody, which waned rapidly. Similarly, ***borreliacidal*** antibody production by cultured lymph node cells from vaccinated mice peaked soon after vaccination and then decreased. Treatment of lymph node cells with interleukin-6 (IL-6) augmented ***borreliacidal*** antibody production, particularly immunoglobulin G2b, whereas treatment with anti-IL-6 inhibited the ***borreliacidal*** response. These findings demonstrate a previously unrecognized role for IL-6 in ***borreliacidal*** antibody production that may have important implications for vaccine development.

L17 ANSWER 2 OF 17 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 2001:208877 BIOSIS
DN PREV200100208877
TI Crystal structure of Lyme disease antigen outer surface protein C from ***Borrelia*** burgdorferi.

AU Eicken, Christoph; Sharma, Vivek; Klabunde, Thomas; Owens, Rick T.; Pikas, Dagmar S.; Hook, Magnus; Sacchettini, James C. (1)
CS (1) Department of Biochemistry and Biophysics, Texas A and M University, College Station, TX, 77843-2128: sacchett@tamu.edu USA
SO Journal of Biological Chemistry, (March 30, 2001) Vol. 276, No. 13, pp. 10010-10015. print.
ISSN: 0021-9258.
DT Article
LA English
SL English
AB The outer surface protein C (***OspC***) is one of the major host-induced antigens of ***Borrelia*** burgdorferi, the causative agent of Lyme disease. We have solved the crystal structure of ***recombinant*** ***OspC*** to a resolution of 2.5 ANG. ***OspC*** , a largely alpha-helical protein, is a dimer with a characteristic central four-helical bundle formed by association of the two longest helices from each subunit. ***OspC*** is very different from OspA and similar to the extracellular domain of the bacterial aspartate receptor and the variant surface glycoprotein from Trypanosoma brucei. Most of the surface-exposed residues of ***OspC*** are highly variable among different ***OspC*** isolates. The membrane proximal halves of the two long alpha-helices are the only conserved regions that are solvent accessible. As vaccination with ***recombinant*** ***OspC*** has been shown to elicit a protective immune response in mice, these regions are candidates for peptide-based vaccines.

L17 ANSWER 3 OF 17 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 2000:181921 BIOSIS
DN PREV200000181921
TI Stability of ***Borrelia*** burgdorferi outer surface protein C under immune selection pressure.
AU Hodzic, Emir; Feng, Sunlian; Barthold, Stephen W. (1)
CS (1) Center for Comparative Medicine, University of California, One Shields Ave., Davis, CA, 95616 USA
SO Journal of Infectious Diseases, (Feb., 2000) Vol. 181, No. 2, pp. 750-753.
ISSN: 0022-1899.
DT Article
LA English
SL English
AB Outer surface protein (Osp) C immune pressure during persistent infection with ***Borrelia*** burgdorferi was examined in relation to genetic variation of ***ospC*** . Mice were infected with clonal B. burgdorferi sensu stricto (s.s.) N40 or B. afzelii PKo and then were hyperimmunized with homologous ***recombinant*** ***OspC*** or with decorin-binding protein A (DbpA) (controls). After 6 months, B. burgdorferi isolates were subjected to restriction enzyme analysis of the amplified ***ospC*** genes and were found to have no differences among 9 B. burgdorferi s.s. N40 and 9 B. afzelii PKo isolates from ***OspC*** hyperimmune mice or among 10 B. burgdorferi s.s. N40 and 10 B. afzelii PKo isolates from DbpA hyperimmune mice, compared with input inocula. Comparison of gene sequences among 4 B. burgdorferi s.s. N40 and 9 B. afzelii PKo isolates from ***OspC*** -immunized mice revealed no ***ospC*** variation from input inocula. Variation in ***ospC*** among B. burgdorferi isolates and species during chronic infection is not likely to be an important mechanism for immune evasion.

L17 ANSWER 4 OF 17 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 2000:124321 BIOSIS
DN PREV200000124321
TI Evaluation of whole-cell and ***OspC*** enzyme-linked immunosorbent assays for discrimination of early Lyme ***borreliosis*** from OspA vaccination.
AU Wieneke, Chad A.; Lovrich, Steven D. (1); Callister, Steven M.; Jobe, Dean A.; Marks, Jennifer A.; Schell, Ronald F.
CS (1) Microbiology Research Laboratory, Gundersen Lutheran Medical Center, 1836 South Ave., La Crosse, WI, 54601 USA
SO Journal of Clinical Microbiology, (Jan., 2000) Vol. 38, No. 1, pp. 313-317.
ISSN: 0095-1137.
DT Article
LA English
SL English
AB A recombinant Lyme ***borreliosis*** vaccine consisting of outer surface protein A (OspA) is commercially available for vaccination of humans against infection with ***Borrelia*** burgdorferi. Vaccination with OspA induces an antibody response that makes serologic interpretation of infection with B. burgdorferi difficult, especially by screening tests based on whole-cell preparations of B. burgdorferi. We show that an enzyme-linked immunosorbent assay with B. burgdorferi sensu stricto 50772, which lacks the plasmid encoding OspA and OspB, or a full-length ***recombinant*** ***OspC*** protein can identify patients infected with B. burgdorferi. We found that 69 and 65% of serum samples from patients with case-defined early Lyme ***borreliosis*** had anti-B. burgdorferi sensu stricto 50772 and anti- ***OspC*** reactivities, respectively. In addition, little or no reactivity was detected with sera obtained from individuals vaccinated with OspA. Unfortunately, 51 and 33% of sera from healthy patients and sera from patients with other illnesses were also reactive against B. burgdorferi sensu stricto 50772 and ***OspC*** , respectively. Although these assays can discriminate B. burgdorferi infection from vaccination with OspA, their lack of specificity highlights the necessity for confirming equivocal or positive reactivities with more specific serodiagnostic tests.

L17 ANSWER 5 OF 17 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1999:482360 BIOSIS
DN PREV199900482360
TI Conformational nature of the ***Borrelia*** burgdorferi B31 outer surface protein C protective epitope.
AU Gilmore, Robert D., Jr. (1); Mbow, M. Lamine
CS (1) Centers for Disease Control and Prevention, DVBID, Foothills Campus, Fort Collins, CO, 80522 USA
SO Infection and Immunity, (Oct., 1999) Vol. 67, No. 10, pp. 5463-5469.
ISSN: 0019-9567.
DT Article
LA English
SL English
AB Active immunization with Escherichia coli-expressed recombinant outer surface protein C (***OspC***) of ***Borrelia*** burgdorferi has been demonstrated to confer protection against a tick-transmitted infection on laboratory animals. A previous study in this laboratory

showed that ***OspC*** antibody raised against a denatured immunogen isolated from B. burgdorferi cells failed to provide protective immunity. Therefore, to determine whether the protective epitope of the recombinant antigen was sensitive to denaturation, ***recombinant*** ***OspC*** preparations were subjected to heat and chemical treatments prior to animal immunization. Following seroconversion to ***OspC*** , the animals were challenged with an infectious dose of B. burgdorferi B31 by tick bite. Whereas mice immunized with a soluble, nondenatured form continued to show protection rates close to 100%, mice that had been immunized with denatured antigen were not protected. Furthermore, mice that were immunized with an insoluble (rather than a soluble), nondenatured form of the ***recombinant*** ***OspC*** showed a protection rate of only 40%. Protective epitope localization experiments showed that either the amino or the carboxy end of the recombinant protein was required to react with a protective ***OspC*** -specific monoclonal antibody. The data from these experiments demonstrate that a conformational organization of the protein is essential for the protective capability of the strain B31 ***OspC*** immunogen.

L17 ANSWER 6 OF 17 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1999:204708 BIOSIS
DN PREV199900204708
TI Resolution of experimental and tick-borne ***Borrelia*** burgdorferi infection in mice by passive, but not active immunization using ***recombinant*** ***OspC*** .
AU Zhong, Weimin; Gern, Lise; Stehle, Thomas; Museteanu, Crisan; Kramer, Michael; Wallich, Reinhard; Simon, Markus M. (1)
CS (1) Max-Plank-Institut fuer Immunbiologie, Stuebeweg 51, D-79108, Freiburg Germany
SO European Journal of Immunology, (March, 1999) Vol. 29, No. 3, pp. 946-957. ISSN: 0014-2980.
DT Article
LA English
SL English
AB Vaccination with outer surface protein A (OspA) of ***Borrelia*** burgdorferi prevents subsequent infection and disease in both laboratory animals and humans with high efficacy. OspA-based immunity, however, does not affect established infection due to the loss of OspA expression in the vertebrate host. We show here that repeated passive transfer of mouse and/or rabbit immune sera to recombinant GST- ***OspC*** fusion protein resulted in a dose-dependent resolution (1) of fully established arthritis and carditis as well as infection in needle-challenged C.B-17 SCID and (2) of infection in both experimentally and tick-infected BALB/c mice. Unexpectedly, active immunization of disease-susceptible AKR/N mice with GST- ***OspC*** only led to prevention but not resolution of disease and infection, in spite of high serum titers of ***OspC*** -specific Ab and the expression of ***ospC*** in tissue-derived spirochetes. The data suggest that the efficacy of ***OspC*** antibody-mediated immunity depends on the immunological history of the recipient and/or environment-dependent regulation of ***OspC*** surface expression by spirochetes in vivo. The results encourage further attempts to develop therapeutic vaccination protocols against Lyme disease.

L17 ANSWER 7 OF 17 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1999:31598 BIOSIS

DN PREV199900031598
TI Peptide-based ***OspC*** enzyme-linked immunosorbent assay for serodiagnosis of Lyme ***borreliosis*** .
AU Mathiesen, Marianne J.; Christiansen, Michael; Hansen, Klaus; Holm, Arne; Asbrink, Eva; Theisen, Michael (1)
CS (1) Dep. Clin. Biochem., Statens Serum Inst., Artillerivej 5, DK-2300 Copenhagen S Denmark
SO Journal of Clinical Microbiology, (Dec., 1998) Vol. 36, No. 12, pp. 3474-3479.
ISSN: 0095-1137.
DT Article
LA English
AB Sera from 210 patients with Lyme ***borreliosis*** (LB) were studied by an enzyme-linked immunosorbent assay (ELISA) based on a synthetic peptide (pepC10) comprising the C-terminal 10-amino-acid residues of ***OspC*** of ***Borrelia*** burgdorferi. We found that 36.3 and 45.0% of the serum samples from patients with erythema migrans (EM) and neuroborreliosis (NB), respectively, displayed immunoglobulin M (IgM) anti-pepC10 reactivities, while these samples rarely (ltoreq 8%) displayed IgG antibody reactivities. Sem from patients with acrodermatitis chronica atrophicans did not contain anti-pepC10 antibodies. The diagnostic performance of this newly developed peptide ELISA was compared with those of an ELISA based on the full-length ***recombinant*** ***OspC*** protein (rOspC) and a commercially available ELISA based on the B. burgdorferi flagellum (Fla). The sensitivity of the IgM pepC10 ELISA was slightly lower ($P < 0.04$) than that of the rOspC ELISA for EM patients (36.3 versus 43.8%), while there was no difference for NB patients (45.0 versus 48.0%). However, the optical density values obtained by the pepC10 ELISA were generally higher than those obtained by the rOspC ELISA, leading to a significantly better quantitative discrimination between seropositive, patients with NB and controls ($P < 0.008$). The specificity of the pepC10 ELISA was similar to those of the rOspC ELISA and the Fla ELISA for relevant controls including patients with syphilis and mononucleosis. Although the overall diagnostic sensitivity of the Fla ELISA was superior, 8.8 and 12.0% of the EM and NB patients, respectively, were antibody positive only by the pepC10 ELISA. Thus, use of a diagnostic test for LB based on the detection of IgM antibodies to pepC10 and Fla has increased sensitivity for the diagnosis of early LB.

L17 ANSWER 8 OF 17 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1998:229528 BIOSIS
DN PREV199800229528
TI Enzyme-linked immunosorbent assay using ***recombinant*** ***OspC*** and internal 14-kDa flagellin fragment for serodiagnosis of early Lyme disease.
AU Rauer, Sebastian (1); Spohn, Nicole; Rasiah, Christiane; Neubert, Uwe; Vogt, Arnold
CS (1) Neurol. Klinik Poliklinik, Albert-Ludwigs-Univ. Freiburg, Breisacher Str. 64, D-79104 Freiburg Germany
SO Journal of Clinical Microbiology, (April, 1998) Vol. 36, No. 4, pp. 857-861.
ISSN: 0095-1137.
DT Article
LA English
AB The outer surface protein C (***OspC***) and the internal 14-kDa

flagellin fragment of strain GeHo of ***Borrelia*** burgdorferi sensu stricto were expressed as recombinant proteins in Escherichia coli and were purified for use in an immunoglobulin M (IgM) enzyme-linked immunosorbent assay (***OspC*** -14-kDa antigen ELISA). No hint at disturbing protein-protein interferences, which might influence the availability of immunoreactive epitopes, was found when the recombinant antigens were combined in the ELISA. The ***recombinant*** ***OspC*** -14-kDa antigen ELISA was compared to a commercial IgM ELISA that used a detergent cell extract from ***Borrelia*** afzelii PKo as the antigen. According to the manufacturer's information, the cell extract contains, in addition to other antigens, the following diagnostically relevant antigens: the 100-kDa (synonyms, 93- and 83-kDa antigens), 41-kDa, OspA, ***OspC*** , and 17-kDa antigens. The specificity was adjusted to 95% on the basis of data for 154 healthy controls. On testing of 104 serum samples from patients with erythema migrans (EM), the sensitivity of the recombinant ELISA (46%) for IgM antibodies was similar to that of the commercial ELISA (45%). However, when 42 serum samples from patients with polyclonal B-cell stimulation due to an Epstein-Barr virus infection were tested, false-positive reactions were significantly less frequent in the recombinant ELISA (10%) than in the whole-cell-extract ELISA (23%). ***OspC*** displays sequence heterogeneity of up to 40% according to the genomospecies. However, when the reactions of serum specimens from controls and EM patients with ***OspC*** from representative strains of B. burgdorferi sensu stricto (strain GeHo) and B. afzelii (strain PKo) were compared in an ELISA, almost no differences in specificity and sensitivity were seen. This demonstrates that the sera predominantly recognize the common epitopes of ***OspC*** tested in this study. In conclusion, we suggest that the ***OspC*** -14-kDa antigens ELISA is a suitable test for the detection of an IgM response in early Lyme disease.

L17 ANSWER 9 OF 17 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1998:7163 BIOSIS
DN PREV199800007163
TI Therapeutic passive vaccination against chronic Lyme disease in mice.
AU Zhong, Weimin; Stehle, Thomas; Museteanu, Crisan; Siebers, Annette; Gern, Lise; Kramer, Michael; Wallich, Reinhard; Simon, Markus M. (1)
CS (1) Max-Planck-Inst. Immunbiol., Stuebeweg 51, D-79108 Freiburg Germany
SO Proceedings of the National Academy of Sciences of the United States of America, (Nov. 11, 1997) Vol. 94, No. 23, pp. 12533-12538.
ISSN: 0027-8424.
DT Article
LA English
AB Passive and active immunization against outer surface protein A (OspA) has been successful in protecting laboratory animals against subsequent infection with ***Borrelia*** burgdorferi. Antibodies (Abs) to OspA convey full protection, but only when they are present at the time of infection. Abs inactivate spirochetes within the tick and block their transmission to mammals, but do not affect established infection because of the loss of OspA in the vertebrate host. Our initial finding that the presence of high serum titers of anti- ***OspC*** Abs (5 to 10 mug/ml) correlates with spontaneous resolution of disease and infection in experimentally challenged immunocompetent mice suggested that therapeutic vaccination with ***OspC*** may be feasible. We now show that polyclonal and monospecific mouse immune sera to ***recombinant***

OspC , but not to OspA, of B. burgdorferi resolve chronic arthritis and carditis and clear disseminated spirochetes in experimentally infected C.B.-17 severe combined immunodeficient mice in a dose-dependent manner. This was verified by macroscopical and microscopical examination of affected tissues and recultivation of spirochetes from ear biopsies. Complete resolution of disease and infection was achieved, independent of whether ***OspC*** -specific immune sera (10 mug ***OspC*** -specific Abs) were repeatedly given (4X in 3- to 4-day intervals) before the onset (day 10 postinfection) or at the time of fully established arthritis and carditis (days 19 or 60 postinfection). The results indicate that in mice spirochetes constitutively express ***OspC*** and are readily susceptible to protective ***OspC*** -specific Abs throughout the infection. Thus, an ***OspC*** -based vaccine appears to be a candidate for therapy of Lyme disease.

L17 ANSWER 10 OF 17 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1996:317101 BIOSIS
DN PREV199699039457
TI Outer surface protein C (***OspC***), but not P39, is a protective immunogen against a tick-transmitted ***Borrelia*** burgdorferi challenge: Evidence for a conformational protective epitope in ***OspC*** .
AU Gilmore, Robert D., Jr. (1); Kappel, Kimberly J.; Dolan, Marc C.; Burkot, Thomas R.; Johnson, Barbara J. B.
CS (1) P. O. Box 2087, Foothills Campus, DVBID, Cent. Disease Control Prevention, Fort Collins, CO 80522 USA
SO Infection and Immunity, (1996) Vol. 64, No. 6, pp. 2234-2239. ISSN: 0019-9567.
DT Article
LA English
AB Outbred mice were immunized with the soluble fraction of a crude Escherichia coli lysate containing either recombinant outer surface protein C (***OspC***) or P39 of ***Borrelia*** burgdorferi B31 (low passage). Following seroconversion, the mice were challenged with an infectious dose of B. burgdorferi B31 via the natural transmission mode of tick bite. Three mice immunized with P39 were not protected; however, all 12 of the ***recombinant*** ***OspC*** -immunized mice were protected from infection as assayed by culture and serology. Although ***OspC*** has been shown to be a protective immunogen against challenge with in vitro-cultured ***borrelia*** administered by needle, this study is the first to demonstrate ***OspC*** effectiveness against tick-borne spirochetes. Following feeding, all ticks still harbored B. burgdorferi, suggesting that the mechanism of protection is not linked to destruction of the infectious spirochete within the tick. In a separate experiment, groups of four mice were immunized with protein fractions from B. burgdorferi B31 purified by preparative gel electrophoresis in an attempt to identify potential protective antigens. Many of these mice developed high-titer-antibody responses against ***OspC*** , but curiously the mice were susceptible to B. burgdorferi infection via tick bite. These results suggest that the protective epitope(s) on ***OspC*** is heat sensitive/conformational, a finding which has implications in vaccine development.

L17 ANSWER 11 OF 17 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1994:360141 BIOSIS

DN PREV199497373141
TI Use of ***recombinant*** ***OspC*** from ***Borrelia*** burgdorferi for serodiagnosis of early Lyme disease.
AU Padula, Steven J. (1); Dias, Feliciano; Sampieri, Alicia; Craven, Robert B.; Ryan, Raymond W.
CS (1) Dep. Med., Div. Rheumatic Dis., Univ. Conn. Health Cent., 263 Farmington Ave., Farmington, CT 06030-1310 USA
SO Journal of Clinical Microbiology, (1994) Vol. 32, No. 7, pp. 1733-1738. ISSN: 0095-1137.
DT Article
LA English
AB Infection with ***Borrelia*** burgdorferi, the etiologic agent of Lyme disease, is associated with an early and dominant humoral response to the spirochete's 23-kDa outer surface protein C (***OspC***). We have cloned and expressed ***OspC*** as a fusion protein in Escherichia coli and have shown that patient serum samples react with it in an enzyme-linked immunosorbent assay (ELISA) (S. J. Padula, A. Sampieri, F. Dias, A. Szczepanski, and R. W. Ryan, Infect. Immun. 61:5097-5105, 1993). Now we have compared the detection of B. burgdorferi-specific immunoglobulin M antibodies in 74 individuals with culture-positive erythema migrans by a whole-cell ELISA, immunoblot, and the ***recombinant*** ***OspC*** (rOspC) ELISA. Seventy-six negative controls were also studied. With all of the tests, there was a statistically significant association between the duration of disease and the frequency of a positive result. With the rOspC ELISA, the predictive value of a positive test was 100% and the predictive value of a negative test was 74%. Similar results were obtained with the whole-cell ELISA and with the immunoblot using as the source of test antigen a strain of B. burgdorferi which expresses abundant levels of ***OspC*** . We conclude that the use of rOspC in an ELISA is a convenient, readily automated, and easily standardized test for the serodiagnosis of early Lyme disease.

L17 ANSWER 12 OF 17 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1994:62966 BIOSIS
DN PREV199497075966
TI Molecular characterization and expression of p23 (***OspC***) from a North American strain of ***Borrelia*** burgdorferi.
AU Padula, Steven J. (1); Sampieri, Alicia; Dias, Feliciano; Szczepanski, Andrew; Ryan, Raymond W.
CS (1) Dep. Med., Univ. Conn. Health Cent., 263 Farmington Ave., Farmington, CT 06030-1310 USA
SO Infection and Immunity, (1993) Vol. 61, No. 12, pp. 5097-5105. ISSN: 0019-9567.
DT Article
LA English
AB We have found that sera from patients with early stages of Lyme disease contain predominant immunoglobulin M reactivity to a major 23-kDa protein (p23) from ***Borrelia*** burgdorferi 2591 isolated in Connecticut. To characterize this immunodominant antigen, we cloned and sequenced p23 and found it to be 83% identical by nucleotide sequence and 75% identical by amino acid sequence to pC (recently renamed ***OspC***), an abundantly expressed protein on the outer surface of PKo, a European strain of B. burgdorferi (B. Wilske, V. Preac-Mursic, S. Jauris, A. Hofmann, I. Pradel, E. Soutschek, E. Schwab, G. Will, and G. Wanner, Infect. Immun. 61:2182-2191, 1993). In addition, immunoelectron microscopy localized p23

to the outer membrane, confirming that p23 is the strain 2591 homolog of ***OspC*** . The North American strain B31, commonly used in serologic assays for Lyme disease, does not express ***OspC*** . Northern (RNA) blot analysis detected low levels of ***ospC*** mRNA in B31, and DNA sequencing of the ***ospC*** gene from B31 revealed a 54-bp deletion in the upstream regulatory region, possibly accounting for the low transcriptional activity of ***ospC*** . The ***ospC*** coding region from B31 was cloned and antibody-reactive ***OspC*** was expressed in Escherichia coli. An immunoglobulin M enzyme-linked immunosorbent assay using ***recombinant*** ***OspC*** as the target antigen shows promise for the serodiagnosis of early stages of Lyme disease.

L17 ANSWER 13 OF 17 CABA COPYRIGHT 2002 CABI
AN 2001:83794 CABA
DN 20013079878
TI Competitive inhibition ELISA for the detection of ***Borrelia*** burgdorferi antigens - failure to detect antigen in the cerebrospinal fluid from patients with neuroborreliosis
AU Rauer, S.; Conrad, A.
CS Department of Neurology, Albert Ludwig University, 79106 Freiburg, Breisacher Str. 64, D-79106 Freiburg, Germany.
SO Journal of Medical Microbiology, (2001) Vol. 50, No. 6, pp. 577-578. 10 ref.
ISSN: 0022-2615
DT Journal
LA English
AB A total of 26 cerebrospinal fluid (CSF) samples from patients with clinical and serological diagnosis of active neuroborreliosis were examined. Four competitive inhibition ELISA tests employing ***borrelia*** whole-cell extract and 3 different recombinant proteins as antigens for the detection of ***borrelia*** components in CSF were done. The 3 antigens were not detected and a positive result with the whole-cell extract was not obtained. ***Recombinant*** ***OspC*** , p83 and 14 kDa antigen was added to CSF samples, which contained intrathecally synthesized antibodies with specificity to these antigens, to investigate the possibility that antigens might be bound in immune complexes. Detection of the added antigens was not significantly impaired by the presence of the corresponding specific antibodies. It is concluded that the detection of ***borrelia*** components in CSF by a competitive inhibition ELISA is not a useful approach in the laboratory diagnosis of neuroborreliosis.

L17 ANSWER 14 OF 17 CABA COPYRIGHT 2002 CABI
AN 1998:115592 CABA
DN 980503904
TI ***Borrelia*** burgdorferi outer surface protein C (***OspC***): investigations of the anti ***OspC*** antibody response in Lyme ***borreliosis*** and the development of a ***recombinant*** ***OspC*** ELISA and a peptide ELISA suitable for routine serology
AU Mathiesen, M. J.
CS Faculty of Health Sciences, University of Copenhagen, Copenhagen, Denmark.
SO DMB, Danish Medical Bulletin, (1998) Vol. 45, No. 1, pp. 106.
ISSN: 0907-8916
DT Dissertation, Journal

LA English

L17 ANSWER 15 OF 17 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
AN 97033567 EMBASE
DN 1997033567
TI Development of an ***OspC*** vaccine against Lyme ***Borreliosis***

AU Livey I.; Dorner F.
CS Dr. I. Livey, Immuno AG, Biomedical Research Center, Uferstrasse 15, A-2304 Orth an der Donau, Austria
SO Acta Dermatovenerologica Alpina, Panonica et Adriatica, (1996) 5/3-4 (185-188).
Refs: 20
ISSN: 1318-4458 CODEN: ADPAEY
CY Slovenia
DT Journal; Conference Article
FS 004 Microbiology
013 Dermatology and Venereology
026 Immunology, Serology and Transplantation
030 Pharmacology
037 Drug Literature Index
LA English
SL English
AB Outer-surface protein C (***OspC***) is a plasmid-encoded lipoprotein and protective antigen produced by Lyme disease ***Borrelia*** species. ***OspC*** is potentially valuable as a vaccine component, but due to the high degree of antigenic heterogeneity of ***OspC*** , an ***OspC*** -based vaccine has to contain several antigenic forms of ***OspC*** . The production of a multivalent ***OspC*** vaccine using antigen expressed in ***Borrelia*** burgdorferi sensu lato is associated with many technical and economical disadvantages. Consequently, we have chosen to produce ***OspC*** in Pichia pastoris and to assess the ability of this ***recombinant*** ***OspC*** to induce antibody production and protective immunity. Mice were immunized with ***recombinant*** ***OspC*** combined with Al(OH)3 and the antibody (IgG) response to ***OspC*** and the resistance of the immunized mice to infection with virulent ***Borrelia*** afzelii were evaluated. ***OspC*** produced in Pichia pastoris is highly immunogenic and protective when adsorbed to Al(OH)3, an adjuvant that is acceptable for use in humans. ***Recombinant*** ***OspC*** derived from Pichia pastoris can be prepared in a form that is suitable for use in an ***OspC*** -based vaccine against Lyme ***Borreliosis*** .

L17 ANSWER 16 OF 17 LIFESCI COPYRIGHT 2002 CSA
AN 1999:28081 LIFESCI
TI Peptide-based ***OspC*** enzyme-linked immunosorbent assay for serodiagnosis of Lyme ***borreliosis***
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SO Journal of Clinical Microbiology, (19981200) vol. 36, no. 12, pp. 3480-3487.
ISSN: 0095-1137.
DT Journal

FS J; W3
LA English
SL English
AB Sera from 210 patients with Lyme ***borreliosis*** (LB) were studied by an enzyme-linked immunosorbent assay (ELISA) based on a synthetic peptide (pepC10) comprising the C-terminal 10-amino-acid residues of ***OspC*** of ***Borrelia*** burgdorferi. We found that 36.3 and 45.0% of the serum samples from patients with erythema migrans (EM) and neuroborreliosis (NB), respectively, displayed immunoglobulin M (IgM) anti-pepC10 reactivities, while these samples rarely (less than or equal to 8%) displayed IgG antibody reactivities. Sera from patients with acrodermatitis chronica atrophicans did not contain anti-pepC10 antibodies. The diagnostic performance of this newly developed peptide ELISA was compared with those of an ELISA based on the full-length ***recombinant*** ***OspC*** protein (rOspC) and a commercially available ELISA based on the B. burgdorferi flagellum (Fla). The sensitivity of the IgM pepC10 ELISA was slightly lower ($P<0.04$) than that of the rOspC ELISA for EM patients (36.3 versus 43.8%), while there was no difference for NB patients (45.0 versus 48.0%). However, the optical density values obtained by the pepC10 ELISA were generally higher than those obtained by the rOspC ELISA, leading to a significantly better quantitative discrimination between seropositive patients with NB and controls ($P<0.008$). The specificity of the pepC10 ELISA was similar to those of the rOspC ELISA and the Fla ELISA for relevant controls including patients with syphilis and mononucleosis. Although the overall diagnostic sensitivity of the Fla ELISA was superior, 8.8 and 12.0% of the EM and MB patients, respectively, were antibody positive only by the pepC10 ELISA. Thus, use of a diagnostic test for LB based on the detection of IgM antibodies to pepC10 and Fla has increased sensitivity for the diagnosis of early LB.

L17 ANSWER 17 OF 17 USPATFULL
AN 2001:97430 USPATFULL
TI Immunological combination compositions and methods
IN Becker, Robert S., Henryville, PA, United States
Huebner, Robert C., Stroudsburg, PA, United States
Gray, Maryann B., Bartonsville, PA, United States
Biscardi, Karen S., South Sterling, PA, United States
PA Connaught Laboratories, Inc., Swiftwater, PA, United States (U.S. corporation)
PI US 6251405 B1 20010626
AI US 1995-476656 19950607 (8)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Swart, Rodney P.
LREP McDonnell Boehnen Hulbert & Berghoff
CLMN Number of Claims: 11
ECL Exemplary Claim: 1
DRWN 2 Drawing Figure(s); 2 Drawing Page(s)
LN.CNT 1274
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Immunological compositions and methods for making and using them. The compositions contain an antigen and a lipoprotein and optionally an adjuvant. The lipoprotein can itself be antigenic or immurogenic. The antigen can be influenza HA and the lipoprotein a recombinantly

expressed product having an OspA leader for lipidation and PspA for the protein portion. The antigen can be ***OspC*** and the lipoprotein OspA. The components of the composition are co-administered. A potentiated immunological response is obtained by the compositions and methods.